



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7**

11201 Renner Boulevard
Lenexa, Kansas 66219

**SPECIAL NOTICE LETTER
URGENT LEGAL MATTER
PROMPT REPLY NECESSARY
VIA EMAIL AND CERTIFIED MAIL: RETURN RECEIPT REQUESTED**

Susan B. Knowles
Union Electric Company d/b/a Ameren Missouri
1901 Chouteau Avenue, MC 1310
St. Louis, Missouri 63103
sknowles@ameren.com

Re: Special Notice Letter for Operable Unit 4 of the Findett Corporation
Superfund Site in St. Charles, Missouri, EPA ID No. MOD006333975

Dear Ms. Knowles:

This letter follows the general notice letter that the U.S. Environmental Protection Agency sent to Union Electric Company d/b/a Ameren Missouri on January 20, 2012 in connection with Operable Unit 4 (OU04) of the Findett Corporation Superfund Site, located in St. Charles, Missouri. In that letter, the EPA notified Ameren of its potential responsibility under Section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund"), 42 U.S.C. § 9607(a), for the cleanup of the Site, including all costs incurred by the EPA in responding to releases at the Site. The EPA is now contacting you in an attempt to resolve Ameren's responsibility at the Site.

Background

Based on an extensive review of records related to the release and/or disposal of hazardous substances at the Site, the EPA identified Ameren as a potentially responsible party (PRP) that contributed hazardous substances to OU04 of the Site. Under the federal Superfund law, Ameren is responsible for the costs of cleaning up OU04 of the Site. The EPA has selected a cleanup approach (formally known as a remedial action) for the Site, which is described in a document called a Record of Decision (ROD) issued by the EPA on June 30, 2021.

Special Notice and Negotiation Moratorium

The EPA has determined that use of the special notice procedures set forth in Section 122(e) of CERCLA, 42 U.S.C. § 9622(e) may facilitate a settlement between Ameren and the EPA for implementation of the response action. Under Section 122(e), this letter triggers a 60-day moratorium on certain EPA response activities at the Site. During this 60-day moratorium, the

EPA will not begin response action at the Site. However, the EPA reserves the right to take action at the Site at any time should a significant threat to the human health or the environment arise.

During this 60-day period, Ameren is invited to participate in formal negotiations with the EPA in an effort to reach a settlement to conduct or finance the response action at the Site. The 60-day negotiation period ends 60 days from your receipt of this letter. The 60-day negotiation moratorium will be extended for an additional 60 days if Ameren provides the EPA with a “good faith offer” to conduct or finance the response action and reimburse the EPA for its costs incurred to date. If the EPA determines that your proposal is not a “good faith offer,” you will be notified in writing of the agency’s decision to end the moratorium. If the moratorium is extended for an additional 60 days, negotiations will conclude 120 days from your receipt of this letter. If settlement is reached between the EPA and Ameren within the 120-day negotiation moratorium, the settlement will be embodied in a Consent Decree for Remedial Design/Remedial Action. When approved by the EPA and the U.S. Department of Justice, the Consent Decree will then be lodged in federal court.

If a “good faith offer” is not received within 60 days, or a timely settlement cannot be reached, the EPA may take appropriate action at the Site, which may include either of the following options: (1) the EPA may fund the remedial action and pursue a cost recovery claim under Section 107 of CERCLA, 42 U.S.C. § 9607, against Ameren; or (2) the EPA may issue a Unilateral Administrative Order (UAO) to Ameren under Section 106(a) of CERCLA, 42 U.S.C. § 9606, requiring Ameren to perform the work described in the ROD. If the recipient of a UAO refuses to comply with the UAO, the EPA may pursue civil litigation against the recipient to require compliance.

Good Faith Offer

A proposed Consent Decree is enclosed to assist you in developing a “good faith offer.”¹ As indicated, the 60-day negotiation moratorium triggered by this letter is extended for 60 days if Ameren submits a “good faith offer” to the EPA. A “good faith offer” to conduct or finance the remedial action is a written proposal that demonstrates your qualifications and willingness to perform such work and includes the following elements:

- A statement of Ameren’s willingness and financial ability to implement the requirements of the ROD and proposed Consent Decree and that provides a sufficient basis for further negotiation;
- A demonstration of Ameren’s technical capability to carry out the remedial action, including identification of the firm(s) that may actually conduct the work or a description of the process that will be undertaken to select the firm(s);

¹ This draft Consent Decree is not currently binding on EPA and is subject to revision and approval by EPA and DOJ. It is based on the model RD/RA Consent Decree, which is available at https://cfpub.epa.gov/compliance/models/view.cfm?model_ID=81.

- A statement of Ameren's willingness to reimburse the EPA for costs the agency will incur in overseeing Ameren's implementation of the remedial action;
- A response to the proposed Consent Decree. If Ameren's offer contemplates modifications to the Consent Decree, please make revisions or edits to the Consent Decree and submit a version showing your proposed modifications to it;
- A redline/strikeout version of the draft Consent Decree in Microsoft Word;
- A response to the proposed Statement of Work. If your offer contemplates modifications to the Statement of Work, please make revisions or edits to the Statement of Work and submit a version showing your proposed modifications to it; and
- A redline/strikeout version of the proposed Statement of Work in Microsoft Word.

Demand for Reimbursement of Costs

With this letter, the EPA demands that Ameren reimburse the agency for its costs incurred to date, and encourages Ameren to voluntarily negotiate a consent decree in which Ameren agrees to perform the RD/RA for OU04.

In accordance with Section 104 of CERCLA, 42 U.S.C. § 9604, the EPA has already taken certain response actions and incurred certain costs in response to conditions at the Site. The EPA is seeking to recover from Ameren its response costs and all the interest authorized to be recovered under Section 107(a) of CERCLA, 42 U.S.C. § 9607. To date, the approximate total response costs identified through August 13, 2021, for OU4 of the Site are \$35,651.56. Under Section 107(a) of CERCLA, the EPA hereby makes a demand for payment from Ameren for the above amount plus all interest authorized to be recovered under Section 107(a). A summary of these costs is enclosed.

Some or all of the costs associated with this notice may be covered by current or past insurance policies issued to Ameren. Most insurance policies will require that you timely notify your carrier(s) of a claim against you. To evaluate whether you should notify your insurance carrier(s) of this demand, you may wish to review current and past policies, beginning with the date of Ameren's first contact with the Site up to the present. Coverage depends on many factors, such as the language of the particular policy and state law.

In the event that Ameren files for protection in a bankruptcy court, Ameren must include the EPA as creditor, because the agency has a potential claim against Ameren. The EPA reserves the right to file a proof of claim or application for reimbursement of administrative expenses.

Administrative Record

In accordance with Section 113 of CERCLA, 42 U.S.C. § 9613, the EPA has established an Administrative Record containing the documents that serve as the basis for the agency's selection of the appropriate response action for the Site. This Administrative Record will be

located at <https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.docdata&id=0700845> and will be available to the public for inspection and comment. The Administrative Record will also be available for inspection and comment at the Superfund Records Center, U.S. Environmental Protection Agency Region 7, 11201 Renner Boulevard, Lenexa, Kansas 66219. You may wish to review the Administrative Record to assist you in responding to this letter, but your review should not delay such response beyond the 60-day period provided by CERCLA.

PRP Response and EPA Contact Person

You are encouraged to contact the EPA within 30 days of your receipt of this letter to indicate your willingness to participate in future negotiations concerning this Site. If the EPA does not receive a timely response, the agency will assume that you do not wish to negotiate a resolution of your liabilities in connection with OU04 of the Site, and that you have declined any involvement in performing the response activities.

Your response to this Special Notice Letter and the demand for costs included herein, including written proposals to perform the remedial action selected for OU04 of the Site, should be sent to:

U.S. Environmental Protection Agency, Region 7
Cathie Chiccine
11201 Renner Boulevard
Lenexa, Kansas 6621
(913) 551-7330
chiccine.catherine@epa.gov

The factual and legal discussions in this letter are intended solely to provide notice and information, and such discussions are not to be construed as a final EPA position on any matter set forth herein. Due to the seriousness of the environmental and legal problems posed by the conditions at the Site, the EPA urges that you give immediate attention and prompt response to this letter.

In addition, the EPA has notified the Federal Natural Resource Trustee² of its intention to perform or enter into negotiations for the performance of response actions at OU04 of the Site.

If you have any questions regarding the technical aspects of this letter, please contact Clint Sperry, Remedial Project Manager, at (913) 551-7157 or sperry.clint@epa.gov. If you have any other questions regarding this letter, you can contact Cathie Chiccine, Site Attorney, at (913) 551-7917 or chiccine.catherine@epa.gov.

² The Natural Resource Trustees are government agencies that have been given the authority to assess the injury to natural resources caused by the release of hazardous substances and to seek the restoration, replacement, or acquisition of equivalent natural resources. The Federal Natural Resource Trustees include the Departments of Agriculture, Commerce, Defense, Energy, and Interior. In addition, states and tribes are Natural Resource Trustees.

My staff and I look forward to working with you during the coming months.

Sincerely,

MARY
PETERSON

Digitally signed by MARY
PETERSON
Date: 2021.11.09
16:20:46 -06'00'

Mary P. Peterson
Director
Superfund and Emergency Management Division

Enclosures

cc: Rachel Hankey, U.S. Department of Justice (via email only)
Scott Stacey, Missouri Department of Natural Resources (via email only)
Tim Duggan, Missouri Office of the Attorney General (via email only)

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION**

UNITED STATES OF AMERICA)	
And THE STATE OF MISSOURI,)	
)	
Plaintiffs,)	
)	Civil Action No.
v.)	
)	
UNION ELECTRIC COMPANY)	
d/b/a AMEREN MISSOURI,)	
)	
Defendant.)	

REMEDIAL DESIGN/REMEDIAL ACTION CONSENT DECREE

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WHEREAS, the United States of America (“United States”), on behalf of the Administrator of the United States Environmental Protection Agency (“EPA”), and the State of Missouri (the “State”), on behalf of the Missouri Department of Natural Resources (MO DNR), filed a complaint in this matter under sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”).

WHEREAS, the United States and the State in their complaint seek, *inter alia*: (1) reimbursement of costs incurred by EPA and the Department of Justice (“DOJ”) for response actions at Operable Unit 4 (“OU4”) of the Findett/Hayford Bridge Road Groundwater Superfund site in St. Charles, Missouri (“Site”), together with accrued interest; and (2) performance by the defendant of a response action at the Site consistent with the National Contingency Plan, 40 C.F.R. part 300 (“NCP”).

WHEREAS, in accordance with the NCP and section 121(f)(1)(F) of CERCLA, EPA notified the State on June 29, 2021, of negotiations with the potentially responsible party (“PRP”) regarding the implementation of the remedial design and remedial action (“RD/RA”) for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and to be a party to this Consent Decree (“Decree”).

WHEREAS, in accordance with section 122(j)(1) of CERCLA, EPA notified the U.S. Department of the Interior on August 20, 2021, of negotiations with the PRP regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustee to participate in the negotiation of this Decree.

WHEREAS, the defendant that has entered into this Decree (“Settling Defendant”) does not admit any liability to Plaintiffs arising out of the transactions or occurrences alleged in the complaints, nor does it acknowledge that the release or threatened release of hazardous substances at or from the Site constitutes an imminent and substantial endangerment to the public health or welfare or the environment.

WHEREAS, in response to a release or a substantial threat of a release of hazardous substances at or from the Site, Settling Defendant completed a Remedial Investigation for the Site on May 1, 2019, and a Feasibility Study for the Site on March 2, 2020 in accordance with 40 C.F.R. § 300.430.

WHEREAS, in accordance with section 117 of CERCLA and 40 C.F.R § 300.430(f), EPA published notice of the completion of the Feasibility Study and of the proposed plan for remedial action on February 2, 2021 in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting and comments received are available to the public as part of the administrative record upon which the Regional Administrator, EPA Region 7, based the selection of the response action.

WHEREAS, EPA selected a remedial action to be implemented at the Site, which is embodied in a final Record of Decision (“Record of Decision”), executed on June 30, 2021, on which the State had a reasonable opportunity to review and comment and on which the State has

given its concurrence. The Record of Decision includes a summary of responses to the public comments. Notice of the final plan was published in accordance with section 117(b) of CERCLA.

WHEREAS, based on the information currently available, EPA and the State have determined that the Work will be properly and promptly conducted by Settling Defendant if conducted in accordance with this Decree.

WHEREAS, the Parties recognize, and the Court by entering this Decree finds, that this Decree has been negotiated by the Parties in good faith, that implementation of this Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Decree is fair, reasonable, in the public interest, and consistent with CERCLA.

NOW, THEREFORE, it is hereby **ORDERED** and **DECREED** as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331, 1367, and 1345, and sections 106, 107 and 113(b) of CERCLA, Mo. Rev. Stat. §§ 260.500 – 260.550, and personal jurisdiction over the Parties. Venue lies in this District under section 113(b) of CERCLA and 28 U.S.C. §§ 1391(b), and 1395(a), because the Site is located in this judicial district. This Court retains jurisdiction over the subject matter of this action and over the Parties for the purpose of resolving disputes arising under this Decree, entering orders modifying this Decree, or effectuating or enforcing compliance with this Decree. Settling Defendant may not challenge the terms of this Decree or this Court's jurisdiction to enter and enforce this Decree.

II. PARTIES BOUND

2. This Decree is binding upon the United States and the State and upon Settling Defendant and its successors. Unless the United States otherwise consents, (a) any change in ownership or corporate or other legal status of Settling Defendant, including any transfer of assets, or (b) any Transfer of the Site or any portion thereof, does not alter any of Settling Defendant's obligations under this Decree. Settling Defendant's responsibilities under this Decree cannot be assigned except under a modification executed in accordance with ¶ 67.

3. In any action to enforce this Decree, Settling Defendant may not raise as a defense the failure of any of its officers, directors, employees, agents, contractors, subcontractors, or any person representing Settling Defendant to take any action necessary to comply with this Decree. Settling Defendant shall provide notice of this Decree to each person representing Settling Defendant with respect to the Site or the Work. Settling Defendant shall provide notice of this Decree to each contractor performing any Work and shall ensure that notice of the Decree is provided to each subcontractor performing any Work.

III. DEFINITIONS

4. Subject to the next sentence, terms used in this Decree that are defined in CERCLA or the regulations promulgated under CERCLA have the meanings assigned to them in CERCLA and the regulations promulgated under CERCLA. Whenever the terms set forth below are used in this Decree, the following definitions apply:

“CERCLA” means the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

“Consent Decree” or “Decree” means this consent decree, all appendixes attached hereto (listed in Section XVIII), and all deliverables incorporated into the Decree under ¶ [7.6] of the SOW. If there is a conflict between a provision in Sections I through XXIII and a provision in any appendix or deliverable, the provision in Sections I through XXIII controls.

“Day” or “day” means a calendar day. In computing any period under this Decree, the day of the event that triggers the period is not counted and, where the last day is not a working day, the period runs until the close of business of the next working day. “Working day” means any day other than a Saturday, Sunday, or federal or State holiday.

“DOJ” means the United States Department of Justice.

“Effective Date” means the date upon which the Court’s approval of this Decree is recorded on its docket.

“EPA” means the United States Environmental Protection Agency.

“Fund” means the Hazardous Substance Superfund established under section 9507 of the Internal Revenue Code, 26 I.R.C. § 9507.

“Future Response Costs” means all costs (including direct, indirect, payroll, contractor, travel, and laboratory costs) that the United States: (a) pays between August 13, 2021 and the Effective Date; and (b) pays after the Effective Date in implementing, overseeing, or enforcing this Decree, including: (i) in developing, reviewing and approving deliverables generated under this Decree; (ii) in overseeing Settling Defendant’s performance of the Work; (iii) in assisting or taking action to obtain access or use restrictions under ¶ 11.a; (iv) in securing, implementing, monitoring, maintaining, or enforcing Institutional Controls, including any compensation paid; (v) in taking action under ¶ 19 (Access to Financial Assurance); (vi) in taking response action described in ¶ 50 because of Settling Defendant’s failure to take emergency action under ¶ [5.4] of the SOW; (vii) in implementing a Work Takeover under ¶ 10; (viii) in implementing community involvement activities including the cost of any technical assistance grant provided under section 117(e) of CERCLA; (ix) in enforcing this Decree, including all costs paid under Section XI (Dispute Resolution) and all litigation costs; and (x) in conducting periodic reviews in accordance with section 121(c) of CERCLA. Future Response Costs also includes all Interest accrued after August 13, 2021 on EPA’s unreimbursed costs (including Past Response Costs) under section 107(a) of CERCLA.

“Including” or “including” means “including but not limited to.”

“Institutional Controls” means Proprietary Controls (*i.e.*, easements or covenants running with the land that (i) limit land, water, or other resource use, provide access rights, or both and (ii) are created under common law or statutory law by an instrument that is recorded, or for which notice is recorded, in the appropriate land records office) and state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices that: (a) limit land, water, or other resource use to minimize the potential for human exposure to Waste Material at or in connection with the Site; (b) limit land, water, or other resource use to implement, ensure noninterference with, or ensure the protectiveness of the Remedial Action; (c) provide information intended to modify or guide human behavior at or in connection with the Site; or (d) any combination thereof.

“Interest” means interest at the rate specified for interest on investments of the Fund, as provided under section 107(a) of CERCLA, compounded annually on October 1 of each year. The applicable rate of interest will be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. As of the date of lodging of this Decree, rates are available online at <https://www.epa.gov/superfund/superfund-interest-rates>.

“MO DNR” shall mean the Missouri Department of Natural Resources and any successor departments or agencies of the State.

“National Contingency Plan” or “NCP” means the National Oil and Hazardous Substances Pollution Contingency Plan promulgated under section 105 of CERCLA, codified at 40 C.F.R. part 300, and any amendments thereto.

“Paragraph” or “¶” means a portion of this Decree identified by an Arabic numeral or an upper- or lower-case letter.

“Parties” means the United States, the State, and Settling Defendant.

“Past Response Costs” means all costs (including direct, indirect, payroll, contractor, travel, and laboratory costs) that the United States paid in connection with the Site through August 13, 2021, plus all interest on such costs accrued under section 107(a) of CERCLA through such date.

“Performance Standards” means the cleanup levels and other measures of achievement of the remedial action objectives, as set forth in the Record of Decision.

“Plaintiffs” means the United States and the State.

“RCRA” means the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, (also known as the Resource Conservation and Recovery Act).

“Record of Decision” means the EPA decision document that memorializes the selection of the remedial action at the Site signed on June 30, 2021, by the Regional Administrator or Regional delegatee, EPA Region 7, and all attachments thereto. The Record of Decision is attached as Appendix A.

“Remedial Action” means the remedial action selected in the Record of Decision.

“Remedial Design” means those activities to be undertaken by Settling Defendant to develop plans and specifications for implementing the Remedial Action as set forth in the SOW.

“Scope of the Remedy” means the scope of the remedy set forth in ¶ [1.3] of the SOW.

“Section” means a portion of this Decree identified by a Roman numeral.

“Settling Defendant” means Union Electric Company d/b/a Ameren Missouri.

“Site” shall mean the property owned by Settling Defendant located on Huster Road in St. Charles, St. Charles County, Missouri. EPA designated the Site as OU4 of the Findett/Hayford Bridge Road Groundwater Superfund site, in that the Site is located approximately 3000 feet north of Elm Road and 3000 feet northeast of 8 Governor Drive, in close proximity to the Findett/Hayford Bridge Road Groundwater Superfund site. The Site is depicted as OU4 on the map attached as Appendix C. The Site does not include OU1, OU2, or OU3 of the Findett/Hayford Bridge Road Groundwater Superfund site.

“Special Account” means the special account, within the Fund, established for the Site by EPA under section 122(b)(3) of CERCLA.

“State” means the State of Missouri.

“State Future Response Costs” means all costs (including direct, indirect, payroll, contractor, travel, and laboratory costs, and including any Oversight Charges incurred pursuant to the December 7, 2015 Reimbursement Agreement) that the State pays after the Effective Date in implementing, overseeing, or enforcing this Decree, including: (i) in developing, reviewing and approving deliverables generated under this Decree; (ii) in overseeing Settling Defendant’s performance of the Work; (iii) in assisting or taking action to obtain access or use restrictions under ¶ 11.a; (iv) in securing, implementing, monitoring, maintaining, or enforcing Institutional Controls, including any compensation paid; (v) in taking action under ¶ 19 (Access to Financial Assurance); (vi) in taking response action described in ¶ 50 because of Settling Defendant’s failure to take emergency action under ¶ [5.5] of the SOW; (vii) in implementing a Work Takeover under ¶ 10; (viii) in implementing community involvement activities including the cost of any technical assistance grant provided under section 117(e) of CERCLA; (ix) in enforcing this Decree, including all costs paid under Section XI (Dispute Resolution) and all litigation costs; and (x) in conducting periodic reviews in accordance with section 121(c) of CERCLA.

“Statement of Work” or “SOW” means the document attached as Appendix B, which describes the activities Settling Defendant must perform to implement and maintain the effectiveness of the Remedial Action.

“Transfer” means to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

“United States” means the United States of America and each department, agency, and instrumentality of the United States, including EPA.

“Waste Material” means (a) any “hazardous substance” under Section 101(14) of CERCLA; (b) any pollutant or contaminant under section 101(33) of CERCLA; (c) any “solid waste” under section 1004(27) of RCRA; and (d) any “hazardous waste” under Section 260.360(11) of Missouri Revised Statutes, Mo. Rev. Stat. § 260.360(11).

“Work” means all obligations of Settling Defendant under Sections V (Performance of the Work) through VIII (Indemnification and Insurance).

“Work Takeover” means EPA’s assumption of the performance of any of the Work in accordance with ¶ 10.

IV. OBJECTIVES

5. The objectives of the Parties in entering into this Decree are to protect public health, welfare, and the environment through the design, implementation, and maintenance of a response action at the Site by Settling Defendant, to pay response costs of Plaintiffs, and to resolve and settle the claims of Plaintiffs against Settling Defendant as provided in this Decree.

V. PERFORMANCE OF THE WORK

6. Settling Defendant shall finance, develop, implement, operate, maintain, and monitor the effectiveness of the Remedial Action all in accordance with the SOW, any modified SOW and all EPA-approved, conditionally approved, or modified deliverables as required by the SOW or modified SOW.

7. Nothing in this Decree and no EPA approval of any deliverable required under this Decree constitutes a warranty or representation by EPA or the State that completion of the Work will achieve the Performance Standards.

8. Modifications to the Remedial Action and Further Response Actions

a. Nothing in this Decree limits EPA’s authority to modify the Remedial Action or to select further response actions for the Site in accordance with the requirements of CERCLA and the NCP. Nothing in this Decree limits Settling Defendant’s rights, under sections 113(k)(2) or 117 of CERCLA, to comment on any modified or further response actions proposed by EPA.

b. If EPA modifies the Remedial Action in order to achieve or maintain the Performance Standards, or both, or to carry out and maintain the effectiveness of the Remedial Action, and such modification is consistent with the Scope of the Remedy, then Settling Defendant shall implement the modification as provided in ¶ 8.c.

c. Upon receipt of notice from EPA that it has modified the Remedial Action as provided in ¶ 8.b and requesting that Settling Defendant implement the modified Remedial Action, Settling Defendant shall implement the modification, subject to their right to initiate dispute resolution under Section XI within 30 days after receipt of EPA’s notice. Settling Defendant shall modify the SOW, or related work plans, or both in accordance with the Remedial Action modification or, if Settling Defendant invoke dispute resolution, in accordance

with the final resolution of the dispute. The Remedial Action modification, the approved modified SOW, and any related work plans will be deemed to be incorporated into and enforceable under this Decree.

9. **Compliance with Applicable Law.** Nothing in this Decree affects Settling Defendant's obligations to comply with all applicable federal and state laws and regulations. Settling Defendant must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the Record of Decision and the SOW. The activities conducted in accordance with this Decree, if approved by EPA, will be deemed to be consistent with the NCP as provided under section 300.700(c)(3)(ii).

10. **Work Takeover**

a. If EPA determines that Settling Defendant (i) has ceased to perform any of the Work required under this Section; (ii) is seriously or repeatedly deficient or late in performing the Work required under this Section; or (iii) is performing the Work required under this Section in a manner that may cause an endangerment to human health or the environment, EPA may issue a notice of Work Takeover to Settling Defendant, including a description of the grounds for the notice and a period of time ("Remedy Period") within which Settling Defendant must remedy the circumstances giving rise to the notice. The Remedy Period will be 20 days, unless EPA determines in its unreviewable discretion that there may be an endangerment, in which case the Remedy Period will be 10 days.

b. If, by the end of the Remedy Period, Settling Defendant does not remedy to EPA's satisfaction the circumstances giving rise to the notice of Work Takeover, EPA may notify Settling Defendant and, as it deems necessary, commence a Work Takeover.

c. EPA may conduct the Work Takeover during the pendency of any dispute under Section XI but shall terminate the Work Takeover if and when: (i) Settling Defendant remedies, to EPA's satisfaction, the circumstances giving rise to the notice of Work Takeover; or (ii) upon the issuance of a final determination under Section XI (Dispute Resolution) that EPA is required to terminate the Work Takeover.

VI. PROPERTY REQUIREMENTS

11. **Agreements Regarding Access and Noninterference**

a. As used in this Section, "Affected Property" means any real property, including the Site, where EPA determines, at any time, that access; land, water, or other resource use restrictions; Institutional Controls; or any combination thereof, are needed to implement the Remedial Action.

b. Settling Defendant is the owner of the Site. Settling Defendant shall use best efforts to secure from the owners of all Affected Property not owned by Settling Defendant an agreement, enforceable by Settling Defendant and by Plaintiffs, requiring such owner to provide Plaintiffs and Settling Defendant, and their respective representatives, contractors, and subcontractors with access at all reasonable times to such owner's property to conduct any activity regarding the Decree, including the following:

- (1) implementing the Work and overseeing compliance with the Decree;
- (2) conducting investigations of contamination at or near the Site;
- (3) assessing the need for, planning, or implementing additional response actions at or near the Site;
- (4) determining whether the Site is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted under the Decree; and
- (5) implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions and Institutional Controls.

c. Further, each agreement required under ¶ 11.b must commit the owner to refrain from using its property in any manner that EPA determines will pose an unacceptable risk to human health or to the environment as a result of exposure to Waste Material, or will interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action, including the following:

- (1) using contaminated groundwater;
- (2) installing potable water wells within the Site without prior notification to and approval by EPA and the State; and
- (3) constructing new structures on the Site without prior notification to and approval by EPA and the State.

d. As used in this Section, “best efforts” means the efforts that a reasonable person in the position of Settling Defendant would use to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access and/or use restriction agreements.

e. Settling Defendant shall provide to EPA and the State a copy of each agreement required under ¶ 11.b. If Settling Defendant cannot accomplish what is required through best efforts in a timely manner, it shall notify EPA, and include a description of the steps taken to achieve the requirements. If the United States deems it appropriate, it may assist Settling Defendant, or take independent action, to obtain such access or use restrictions.

12. Access and Noninterference by Settling Defendant. Settling Defendant shall: (a) provide Plaintiffs and their representatives, contractors, and subcontractors with access at all reasonable times to the Site to conduct any activity regarding the Decree, including those listed in ¶ 11.b; and (b) refrain from using the Site in any manner that EPA determines will pose an unacceptable risk to human health or to the environment because of exposure to Waste Material, or will interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action, including the restrictions listed in ¶ 11.c.

13. If EPA determines in a decision document prepared in accordance with the NCP that Institutional Controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices are appropriate, Settling Defendant shall cooperate with EPA's and the State's efforts to secure and ensure compliance with such Institutional Controls.

14. Notice to Successors-in-Title

a. Settling Defendant shall, within 15 days after the Effective Date, submit for EPA approval a notice to be recorded regarding its property at the Site in the appropriate land records. The notice must: (1) include a proper legal description of the property; (2) provide notice to all successors-in-title: (i) that the property is part of, or affected by, the Site; (ii) that EPA has selected a remedy for the Site; and (iii) that potentially responsible parties have entered into a Decree requiring implementation of such remedy; and (3) identify the U.S. District Court in which the Decree was filed, the name and civil action number of this case, and the Effective Date of the Decree. Settling Defendant shall record the notice within 10 days after EPA's approval of the notice and submit to EPA, within 10 days thereafter, a certified copy of the recorded notice.

b. Settling Defendant shall, prior to entering into a contract to Transfer any of its property that is part of the Site, or 60 days prior to a Transfer of such property, whichever is earlier:

- (1) notify the proposed transferee that EPA has selected a remedy regarding the Site, that potentially responsible parties have entered into a Consent Decree requiring implementation of such remedy, and that the United States District Court has entered the Decree (identifying the name and civil action number of this case and the date the Court entered the Decree); and
- (2) notify EPA and the State of the name and address of the proposed transferee and provide EPA and the State with a copy of the notice that it provided to the proposed transferee.

15. Notwithstanding any provision of the Decree, EPA and the State retain all of their access authorities and rights, as well as all of their rights to require land, water, or other resource use restrictions and Institutional Controls, including related enforcement authorities, under CERCLA, RCRA, and any other applicable statute or regulations.

VII. FINANCIAL ASSURANCE

16. To ensure completion of the Work required under Section V, Settling Defendant shall secure financial assurance, initially in the amount of \$265,000 ("Estimated Cost of the Work"), for the benefit of EPA. The financial assurance must: (i) be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from EPA; and (ii) be satisfactory to EPA. As of the date of lodging of this Decree, the sample documents can be found under the "Financial Assurance - Settlements" category on the

Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>. Settling Defendant may use multiple mechanisms if they are limited to surety bonds guaranteeing payment, letters of credit, trust funds, insurance policies, or some combination thereof. The following are acceptable mechanisms:

- a. a surety bond guaranteeing payment, performance of the Work, or both, that is issued by a surety company among those listed as acceptable sureties on federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;
- b. an irrevocable letter of credit, payable to EPA or at the direction of EPA, that is issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency;
- c. a trust fund established for the benefit of EPA that is administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;
- d. a policy of insurance that provides EPA with acceptable rights as a beneficiary thereof and that is issued by an insurance carrier that has the authority to issue insurance policies in the applicable jurisdiction(s) and whose insurance operations are regulated and examined by a federal or state agency;

17. Settling Defendant shall, within 30 days after the Effective Date, seek EPA's approval of the form of Settling Defendant's financial assurance. Within 30 days after such approval, Settling Defendant shall secure all executed or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to the Regional Financial Management Officer, to DOJ, and to EPA and the State in accordance with ¶ 65.

18. Settling Defendant shall diligently monitor the adequacy of the financial assurance. If Settling Defendant becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, Settling Defendant shall notify EPA of such information within seven days. If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify Settling Defendant of such determination. Settling Defendant shall, within 30 days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. EPA may extend this deadline for such time as is reasonably necessary for Settling Defendant, in the exercise of due diligence, to secure and submit to EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days. Settling Defendant shall follow the procedures of ¶ 20 in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism. Settling Defendant's inability to secure financial assurance in accordance with this Section does not excuse performance of any other requirement of this Decree.

19. Access to Financial Assurance

a. If EPA issues a notice of a Work Takeover under ¶ 10.b, then, in accordance with any applicable financial assurance mechanism, EPA may require that any funds guaranteed be paid in accordance with ¶ 19.d.

b. If EPA is notified that the issuer of a financial assurance mechanism intends to cancel the mechanism, and Settling Defendant fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with ¶ 19.d.

c. If, upon issuance of a notice of a Work Takeover under ¶ 10.b, EPA is unable for any reason to promptly secure the resources guaranteed under any applicable financial assurance mechanism, whether in cash or in kind, to continue and complete the Work, then EPA is entitled to demand an amount, as determined by EPA, sufficient to cover the cost of the remaining Work to be performed. Settling Defendant shall, within 30 days after such demand, pay the amount demanded as directed by EPA.

d. Any amounts required to be paid under this ¶ 19 must be, as directed by EPA: (i) paid to EPA in order to facilitate the completion of the Work by EPA or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or trust company that is insured by the FDIC, in order to facilitate the completion of the Work by another person. If payment is made to EPA, EPA may deposit the payment into the Fund or into the Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the Fund.

20. Modification of Amount, Form, or Terms of Financial Assurance. Beginning after the first anniversary of the Effective Date, and no more than once per calendar year, Settling Defendant may submit a request to change the form, terms, or amount of the financial assurance mechanism. Any such request must be submitted to EPA in accordance with ¶ 17, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. EPA will notify Settling Defendant of its decision regarding the request. Settling Defendant may initiate dispute resolution under Section XI regarding EPA's decision within 30 days after receipt of the decision. Settling Defendant may modify the form, terms, or amount of the financial assurance mechanism only: (a) in accordance with EPA's approval; or (b) in accordance with any resolution of a dispute under Section XI. Settling Defendant shall submit to EPA, within 30 days after receipt of EPA's approval or consistent with the terms of the resolution of the dispute, documentation of the change to the form, terms, or amount of the financial assurance instrument.

21. Release, Cancellation, or Discontinuation of Financial Assurance. Settling Defendant may release, cancel, or discontinue any financial assurance provided under this Section only: (a) if EPA issues a Certification of Work Completion under ¶ [5.10] of the SOW; (b) in accordance with EPA's approval of such release, cancellation, or discontinuation; or (c) if there is a dispute regarding the release, cancellation or discontinuance of any financial assurance,

in accordance with the agreement, final administrative decision, or final judicial decision resolving such dispute under Section XI.

VIII. INDEMNIFICATION AND INSURANCE

22. Indemnification

a. Plaintiffs do not assume any liability by entering into this Decree or by virtue of any designation of Settling Defendant as EPA's and the State's authorized representatives under section 104(e)(1) of CERCLA. Settling Defendant shall indemnify and save and hold harmless Plaintiffs and their officials, agents, employees, contractors, subcontractors, and representatives for or from any claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Defendant, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on Settling Defendant's behalf or under its control, in carrying out activities under this Decree, including any claims arising from any designation of Settling Defendant as EPA's and the State's authorized representative under section 104(e)(1) of CERCLA. Further, Settling Defendant agrees to pay Plaintiffs all costs they incur including attorneys' fees and other expenses of litigation and settlement arising from, or on account of, claims made against Plaintiffs based on negligent or other wrongful acts or omissions of Settling Defendant, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under its control in carrying out activities under with this Decree. Plaintiffs may not be held out as parties to any contract entered into by or on behalf of Settling Defendant in carrying out activities under this Decree. Settling Defendant and any such contractor may not be considered an agent of Plaintiffs.

b. Either Plaintiff shall give Settling Defendant notice of any claim for which such Plaintiff plans to seek indemnification in accordance with this ¶ 22, and shall consult with Settling Defendant prior to settling such claim.

23. Settling Defendant covenants not to sue and shall not assert any claim or cause of action against Plaintiffs for damages or reimbursement or for set-off of any payments made or to be made to Plaintiffs, arising from or on account of any contract, agreement, or arrangement between Settling Defendant and any person for performance of Work or other activities on or relating to the Site, including claims on account of construction delays. In addition, Settling Defendant shall indemnify and save and hold Plaintiffs harmless with respect to any claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Settling Defendant and any person for performance of work at or relating to the Site, including claims on account of construction delays.

24. **Insurance.** Settling Defendant shall secure, by no later than 15 days before commencing any on-site Work, the following insurance: (a) commercial general liability insurance with limits of liability of \$1 million per occurrence; (b) automobile liability insurance with limits of liability of \$1 million per accident; and (c) umbrella liability insurance with limits of liability of \$5 million in excess of the required commercial general liability and automobile liability limits. The insurance policy must name Plaintiffs as additional insureds with respect to all liability arising out of the activities performed by or on behalf of Settling Defendant under

this Decree. Settling Defendant shall maintain this insurance until the first anniversary after issuance of EPA's Certification of Remedial Action Completion under ¶ [5.8] of the SOW. In addition, for the duration of this Decree, Settling Defendant shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendant in furtherance of this Decree. Prior to commencement of the Work, Settling Defendant shall provide to EPA certificates of such insurance and a copy of each insurance policy. Settling Defendant shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If Settling Defendant demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendant need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. Settling Defendant shall ensure that all submittals to EPA under this Paragraph identify the Findett/Huster Road Groundwater Superfund Site, St. Charles, Missouri and the civil action number of this case.

IX. PAYMENTS FOR RESPONSE COSTS

25. Payment by Settling Defendant for Past Response Costs.

a. Within 30 days after the Effective Date, Settling Defendant shall pay EPA, in reimbursement of Past Response Costs in connection with the Site, \$35,651.56. The Financial Litigation Unit ("FLU") of the United States Attorney's Office for the Eastern District of Missouri shall provide to Settling Defendant, in accordance with ¶ 65, instructions for making this payment, including a Consolidated Debt Collection System ("CDCS") reference number. Settling Defendant shall make such payment at <https://www.pay.gov> in accordance with the FLU's instructions, including references to the CDCS Number. Settling Defendant shall send notices of this payment to DOJ and EPA in accordance with ¶ 65. If the payment required under this Paragraph is late, Settling Defendant shall pay, in addition to any stipulated penalties owed under Section XII, an additional amount for Interest accrued from the Effective Date until the date of payment.

26. Payments by Settling Defendant for Future Response Costs

a. **Periodic Bills.** On a periodic basis, EPA will send Settling Defendant a bill for Future Response Costs, including an itemized cost summary listing direct and indirect costs paid by EPA, its contractors, subcontractors, and DOJ. Settling Defendant may initiate a dispute under Section XI regarding a Future Response Cost billing, but only if the dispute relates to one or more of the following issues: (i) whether EPA has made an arithmetical error; (ii) whether EPA has included a cost item that is not within the definition of Future Response Costs; or (iii) whether EPA has paid excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. Settling Defendant must specify in the Notice of Dispute the contested costs and the basis for the objection.

b. **Payment of Bill.** Settling Defendant shall pay the bill, or if it initiates dispute resolution, the uncontested portion of the bill, if any, within 30 days after receipt of the bill. Settling Defendant shall pay the contested portion of the bill determined to be owed, if any,

within 30 days after the determination regarding the dispute. Each payment for: (i) the uncontested bill or portion of bill, if late, and; (ii) the contested portion of the bill determined to be owed, if any, must include an additional amount for Interest accrued from the date of receipt of the bill through the date of payment. Settling Defendant shall make payment at <https://www.pay.gov> using the “EPA Miscellaneous Payments Cincinnati Finance Center” link, and including references to the Site/Spill ID and DJ numbers listed in ¶ 65 and the purpose of the payment. Settling Defendant shall send notices of this payment to DOJ and EPA in accordance with ¶ 65.

c. **Deposit of Payments.** EPA may, in its unreviewable discretion, deposit the amounts paid under ¶¶ 25 and 26.b in the Fund, in the Special Account, or both. EPA may, in its unreviewable discretion, retain and use any amounts deposited in the Special Account to conduct or finance response actions at or in connection with the Site, or transfer those amounts to the Fund.

d. **Payments by Settling Defendant to State.** Settling Defendant shall pay to the State all State Future Response Costs not inconsistent with the NCP. The State will send Settling Defendant a bill requiring payment that includes an accounting, which includes direct and indirect costs incurred by the State and its contractors and subcontractors, on a quarterly basis. Settling Defendant shall pay the bill, or if it initiates dispute resolution, the uncontested portion of the bill, if any, within 60 days after receipt of the bill. Settling Defendant shall pay the contested portion of the bill determined to be owed, if any, within 30 days after the determination regarding the dispute. Settling Defendant may initiate a dispute under Section XI regarding a Future Response Cost billing, but only if the dispute relates to one or more of the following issues: (i) whether the State has made an arithmetical error; (ii) whether the State has included a cost item that is not within the definition of Future Response Costs; or (iii) whether the State has paid excess costs as a direct result of a State action that was inconsistent with a specific provision or provisions of the NCP. Settling Defendant must specify in the Notice of Dispute the contested costs and the basis for the objection. Settling Defendant shall make all payments to the State required by this Paragraph in accordance with ¶ 25.b.

X. FORCE MAJEURE

27. “Force majeure,” for purposes of this Decree, means any event arising from causes beyond the control of Settling Defendant, of any entity controlled by Settling Defendant, or of Settling Defendant’s contractors that delays or prevents the performance of any obligation under this Decree despite Settling Defendant’s best efforts to fulfill the obligation. Given the need to protect public health and welfare and the environment, the requirement that Settling Defendant exercises “best efforts to fulfill the obligation” includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. “Force majeure” does not include financial inability to complete the Work or a failure to achieve the Performance Standards.

28. If any event occurs for which Settling Defendant will or may claim a force majeure, Settling Defendant shall notify EPA's Project Coordinator by email. The deadline for the initial notice is 7 days after the date Settling Defendant first knew or should have known that the event would likely delay performance. Settling Defendant shall be deemed to know of any circumstance of which any contractor of, subcontractor of, or entity controlled by Settling Defendant knew or should have known. Within 7 days thereafter, Settling Defendant shall send a further notice to EPA and the State that includes: (i) a description of the event and its effect on Settling Defendant's completion of the requirements of the Decree; (ii) a description of all actions taken or to be taken to prevent or minimize the adverse effects or delay; (iii) the proposed extension of time for Settling Defendant to complete the requirements of the Decree; (iv) a statement as to whether, in the opinion of Settling Defendant, such event may cause or contribute to an endangerment to public health or welfare, or the environment; and (v) all available proof supporting their claim of force majeure. Failure to comply with the notice requirements herein regarding an event precludes Settling Defendant from asserting any claim of force majeure regarding that event, provided, however, that if EPA, despite late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under ¶ 27 and whether Settling Defendant has exercised its best efforts under ¶ 27, EPA may, in its unreviewable discretion, excuse in writing Settling Defendant's failure to submit timely or complete notices under this Paragraph.

29. EPA, after a reasonable opportunity for review and comment by the State, will notify Settling Defendant of its determination whether Settling Defendant is entitled to relief under ¶ 27, and, if so, the duration of the extension of time for performance of the obligations affected by the force majeure. An extension of the time for performance of the obligations affected by the force majeure shall not, of itself, extend the time for performance of any other obligation. Settling Defendant may initiate dispute resolution under Section XI regarding EPA's determination within 15 days after receipt of the determination. In any such proceeding, Settling Defendant has the burden of proving that it is entitled to relief under ¶ 27 and that their proposed extension was or will be warranted under the circumstances.

30. The failure by EPA to timely complete any activity under the Decree or the SOW is not a violation of the Decree, provided, however, that if such failure prevents Settling Defendant from timely completing a requirement of the Decree, Settling Defendant may seek relief under this Section.

XI. DISPUTE RESOLUTION

31. Unless otherwise provided in this Decree, Settling Defendant must use the dispute resolution procedures of this Section to resolve any dispute arising under this Decree. Settling Defendant shall not initiate a dispute challenging the Record of Decision. The United States may enforce any requirement of the Decree that is not the subject of a pending dispute under this Section.

32. A dispute will be considered to have arisen when one or more parties sends a written notice of dispute ("Notice of Dispute") in accordance with ¶ 65. Disputes arising under this Decree must in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations may not exceed 20 days after the dispute

arises, unless the parties to the dispute otherwise agree. If the parties cannot resolve the dispute by informal negotiations, the position advanced by EPA is binding unless Settling Defendant initiates formal dispute resolution under ¶ 33.

33. **Formal Dispute Resolution**

a. **Statements of Position.** Settling Defendant may initiate formal dispute resolution by serving on the Plaintiffs, within 20 days after the conclusion of informal dispute resolution under ¶ 32, an initial Statement of Position regarding the matter in dispute. The Plaintiffs' responsive Statements of Position are due within 20 days after receipt of the initial Statement of Position. All Statements of Position must include supporting factual data, analysis, opinion, and other documentation. A reply, if any, is due within 10 days after receipt of the response. If appropriate, EPA may extend the deadlines for filing statements of position for up to 45 days and may allow the submission of supplemental statements of position.

b. **Formal Decision.** The Director of the Superfund & Emergency Management Division, EPA Region 7, will issue a formal decision resolving the dispute ("Formal Decision") based on the statements of position and any replies and supplemental statements of position. The Formal Decision is binding on Settling Defendant unless it timely seeks judicial review under ¶ 34.

c. **Compilation of Administrative Record.** EPA shall compile an administrative record regarding the dispute, which must include all statements of position, replies, supplemental statements of position, and the Formal Decision.

34. **Judicial Review**

a. Settling Defendant may obtain judicial review of the Formal Decision by filing, within 20 days after receiving it, a motion with the Court and serving the motion on all Parties. The motion must describe the matter in dispute and the relief requested. The parties to the dispute shall brief the matter in accordance with local court rules.

b. **Review on the Administrative Record.** Judicial review of disputes regarding the following issues must be on the administrative record: (i) the adequacy or appropriateness of deliverables required under the Decree; (ii) the adequacy of the performance of the Remedial Action; (iii) whether a Work Takeover is warranted under ¶ 10; (iv) determinations about financial assurance under Section VII; (v) EPA's selection of modified or further response actions; (vi) any other items requiring EPA approval under the Decree; and (vii) any other disputes that the Court determines should be reviewed on the administrative record. For all of these disputes, Settling Defendant bears the burden of demonstrating that the Formal Decision was arbitrary and capricious or otherwise not in accordance with law.

c. Judicial review of any dispute not governed by ¶ 34.b shall be governed by applicable principles of law.

35. **Escrow Account.** For disputes regarding a Future Response Cost billing, Settling Defendant shall: (a) establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation ("FDIC"); (b) remit

to that escrow account funds equal to the amount of the contested Future Response Costs; and (c) send to EPA, in accordance with ¶ 65, copies of the correspondence and of the payment documentation (e.g., the check) that established and funded the escrow account, including the name of the bank, the bank account number, and a bank statement showing the initial balance in the account. EPA may, in its unreviewable discretion, waive the requirement to establish the escrow account. Settling Defendant shall cause the escrow agent to pay the amounts due to EPA and the State under ¶ 26, if any, by the deadline for such payment in ¶ 26. Settling Defendant is responsible for any balance due under ¶ 26 after the payment by the escrow agent.

36. The initiation of dispute resolution procedures under this Section does not extend, postpone, or affect in any way any requirement of this Decree, except as EPA agrees, or as determined by the Court. Stipulated penalties with respect to the disputed matter will continue to accrue, but payment is stayed pending resolution of the dispute, as provided in ¶ 39.

XII. STIPULATED PENALTIES

37. Unless the noncompliance is excused under Section X (Force Majeure), Settling Defendant are liable to the United States and the State, with 90% of each stipulated penalty amount paid to the United States and 10% paid to the State, for the following stipulated penalties:

a. for any failure: (i) to pay any amount due under Section IX; (ii) to establish and maintain financial assurance in accordance with Section VII; (iii) Submission of the Draft and Final RD in accordance with ¶ 4.6 (Final (100%) RD) of the SOW; (iv) Submission of the RA Work Plan in accordance with ¶ 5.2 (RA Work Plan) of the SOW; and (v) Submission of the RA Report in accordance with ¶ 5.8 (Certification of RA Completion) of the SOW:

Period of Noncompliance	Penalty Per Noncompliance Per Day
1st through 14th day	\$1,500
15th through 30th day	\$3,000
31st day and beyond	\$6,000

b. for any failure to submit timely or adequate deliverables required by this Decree other than those specified in ¶ 37.a:

Period of Noncompliance	Penalty Per Noncompliance Per Day
1st through 14th day	\$1,000
15th through 30th day	\$2,000
31st day and beyond	\$3,000

38. **Work Takeover Penalty.** If EPA commences a Work Takeover, Settling Defendant is liable for a stipulated penalty in the amount of \$500,000. This stipulated penalty is in addition to the remedy available to EPA under ¶ 19 (Access to Financial Assurance) to fund the performance of the Work by EPA.

39. **Accrual of Penalties.** Stipulated penalties accrue from the date performance is due, or the day a noncompliance occurs, whichever is applicable, until the date the requirement is completed or the final day of the correction of the noncompliance. Nothing in this Decree prevents the simultaneous accrual of separate penalties for separate noncompliances with this Decree. Stipulated penalties accrue regardless of whether Settling Defendant has been notified of its noncompliance, and regardless of whether Settling Defendant has initiated dispute resolution under Section XI, provided, however, that no penalties will accrue as follows:

a. with respect to a submission that EPA subsequently determines is deficient under ¶ [7.6] of the SOW, during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Defendant of any deficiency;

b. with respect to a matter that is the subject of dispute resolution under Section XI, during the period, if any, beginning on the 21st day after the later of the date that EPA's Statement of Position is received or the date that Settling Defendant's reply thereto (if any) is received until the date of the Formal Decision under ¶ 33.b; or

c. with respect to a matter that is the subject of judicial review by the Court under ¶ 34, during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute.

40. **Demand and Payment of Stipulated Penalties.**

a. **Payments to EPA.** EPA may send Settling Defendant a demand for stipulated penalties. The demand will include a description of the noncompliance and will specify the amount of the stipulated penalties owed. Settling Defendant may initiate dispute resolution under Section XI within 30 days after receipt of the demand. Settling Defendant shall pay the amount demanded or, if it initiates dispute resolution, the uncontested portion of the amount demanded, within 30 days after receipt of the demand. Settling Defendant shall pay the contested portion of the penalties determined to be owed, if any, within 30 days after the resolution of the dispute. Each payment for: (a) the uncontested penalty demand or uncontested portion, if late, and; (b) the contested portion of the penalty demand determined to be owed, if any, must include an additional amount for Interest accrued from the date of receipt of the demand through the date of payment. Settling Defendant shall make payment at <https://www.pay.gov> using the link for "EPA Miscellaneous Payments Cincinnati Finance Center," including references to the Site/Spill ID and DJ numbers listed in ¶ 65, and the purpose of the payment. Settling Defendant shall send a notice of this payment to DOJ and EPA, in accordance with ¶ 65. The payment of stipulated penalties and Interest, if any, does not alter any obligation by Settling Defendant under the Decree.

b. **Payments to the State.** Settling Defendant shall make all payments to the State under this Section by forwarding a corporate check, payable to "State of Missouri (St. Louis County)" to the Office of the Attorney General, P.O. Box 899, Jefferson City, Missouri, 65102-0899, Attention Collections Specialist, Financial Services Section. Checks must identify the name of the site, the location of the site, the EPA identification number for the Site if any,

and the docket number of this Order. Settling Defendant shall forward a copy of the check and transmittal letter to the State Project Coordinator in accordance with ¶ 65.

41. Nothing in this Decree limits the authority of the United States or the State: (a) to seek any remedy otherwise provided by law for Settling Defendant's failure to pay stipulated penalties or interest; or (b) to seek any other remedies or sanctions available by virtue of Settling Defendant's noncompliances with this Decree or of the statutes and regulations upon which it is based, including penalties under section 122(*l*) of CERCLA, provided, however, that the United States may not seek civil penalties under section 122(*l*) of CERCLA for any noncompliance for which a stipulated penalty is provided for in this Decree, except in the case of a willful noncompliance with this Decree.

42. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued under this Decree.

XIII. COVENANTS BY PLAINTIFFS

43. **Covenants for Settling Defendant.** Subject to ¶ 45, the United States covenants not to sue or to take administrative action against Settling Defendant under sections 106 and 107(a) of CERCLA regarding the Work, Past Response Costs, and Future Response Costs.

44. The covenants under ¶ 43: (a) take effect upon the Effective Date; (b) are conditioned on the satisfactory performance by Settling Defendant of the requirements of this Decree; (c) extend to the successors of Settling Defendant but only to the extent that the alleged liability of the successor of Settling Defendant is based solely on its status as a successor of Settling Defendant; and (d) do not extend to any other person.

45. **General Reservations.** Notwithstanding any other provision of this Decree, the United States reserves, and this Decree is without prejudice to, all rights against Settling Defendant regarding the following:

- a. liability for failure by Settling Defendant to meet a requirement of this Decree;
- b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;
- c. liability based on Settling Defendant's ownership of the Site when such ownership commences after Settling Defendant's signature of this Decree;
- d. liability based on Settling Defendant's operation of the Site when such operation commences after Settling Defendant's signature of this Decree and does not arise solely from Settling Defendant's performance of the Work;
- e. liability based on Settling Defendant's transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of Waste Material

at or in connection with the Site, after signature of this Decree by Settling Defendant, other than as provided in the Record of Decision, under this Decree, or ordered by EPA;

f. liability for additional operable units at the Site or the final response action;

g. liability, prior to achievement of Performance Standards, for additional response actions that EPA determines are necessary to achieve and maintain Performance Standards or to carry out and maintain the effectiveness of the Remedial Action, but that are not covered by ¶ 8.b; and

h. criminal liability.

46. Covenants for Settling Defendant by the State and the State's General Reservation of Rights. In consideration of the actions that Settling Defendant will perform and payments Settling Defendant will make under the terms of this Consent Decree, and except as specifically provided in this Consent Decree, the State covenants not to sue or to take administrative action against Settling Defendant pursuant to Sections 106 and 107(a) of CERCLA, and Sections 260.510 and 260.530 of the Missouri Revised Statutes for performance of the Work and for recovery of the State's response and oversight costs from the Effective Date through the completion of the Work. The State's covenants not to sue are conditioned upon the satisfactory performance by Settling Defendant of all obligations under this Consent Decree. These covenants not to sue extend only to Settling Defendant, and do not extend to any other person. Settling Defendant is not released from liability, if any, and Settling Defendant retains all defenses for any State enforcement actions that the State deems appropriate for matters beyond the scope of this Consent Decree including, but no limited to, the following:

a. penalties or injunctive relief under the Missouri Hazardous Waste Management Law or its implementing regulations, or under other federal or state laws or regulations, except as expressly stated herein;

b. criminal charges;

c. Claims for natural resource damages.

47. Without limiting the foregoing, the parties expressly agree that nothing in this Consent Decree shall:

a. Prevent the State from applying to this Court for further orders or relief if violations of this Consent Decree occur;

b. Preclude the State from seeking equitable or legal relief for violations of any laws or regulations not alleged in the Complaint;

c. Preclude the State from seeking equitable or legal relief for future violations of the Missouri Hazardous Waste Management Law or its implementing regulations.

48. The State further reserves all legal and equitable remedies to address any imminent and substantial danger to the public health or welfare or the environment arising at, or

posed by, the Site, or Settling Defendant's acts, or omissions, whether related to the violations addressed in this Consent Decree or otherwise.

49. Subject to ¶ 43, nothing in this Decree limits any authority of Plaintiffs to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or to request a Court to order such action.

XIV. COVENANTS BY SETTLING DEFENDANT

50. Covenants by Settling Defendant

a. Subject to ¶ 51, Settling Defendant covenants not to sue and shall not assert any claim or cause of action against the United States or the State under CERCLA, section 7002(a) of RCRA, the United States Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, the State Constitution, State law, or at common law regarding the Work, past response actions relating to the Site, Past Response Costs, and Future Response Costs.

b. Subject to ¶ 51, Settling Defendant covenants not to seek reimbursement from the Fund through CERCLA or any other law for costs of the Work and past response actions regarding the Site, Past Response Costs, Future Response Costs, State Past Response Costs, and State Future Response Costs.

51. **Settling Defendant's Reservation.** The covenants in ¶ 50 do not apply to any claim or cause of action brought, or order issued, after the Effective Date by the United States or the State to the extent such claim, cause of action, or order is within the scope of a reservation under ¶¶ 45.a through 45.g.

52. **De Micromis Waiver.** Settling Defendant shall not assert any claims and waive all claims or causes of action (including claims or causes of action under sections 107(a) and 113 of CERCLA) that they may have for all matters relating to the Site against any person where the person's liability to Settling Defendant with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials. This waiver does not apply to any claim or cause of action against any person otherwise covered by such waiver if EPA determines that: (i) the materials containing hazardous substances contributed to the Site by such person contributed significantly or could contribute significantly, either individually or in the aggregate, to the cost of the response action or natural resource restoration at the Site; or (ii) such person has failed to comply with any information request or administrative subpoena issued under sections 104(e) or 122(e)(3)(B) of CERCLA or section 3007 of RCRA, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site; or if (iii) such person has been convicted of a criminal violation for the conduct to which the waiver would apply and that conviction has not been vitiated on appeal or otherwise. This waiver does

not apply with respect to any defense, claim, or cause of action that a Settling Defendant may have against any person otherwise covered by this waiver if such person asserts a claim or cause of action relating to the Site against such Settling Defendant.

53. Settling Defendant agrees not to seek judicial review of the final rule listing the Site on the NPL based on a claim that changed site conditions that resulted from the performance of the Work in any way affected the basis for listing the Site.

XV. EFFECT OF SETTLEMENT; CONTRIBUTION

54. The Parties agree and the Court finds that: (a) the complaint filed by the United States in this action is a civil action within the meaning of section 113(f)(1) of CERCLA; (b) this Decree constitutes a judicially approved settlement under which Settling Defendant has, as of the Effective Date, resolved its liability to the United States within the meaning of sections 113(f)(2) and 113(f)(3)(B) of CERCLA; and (c) Settling Defendant is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by section 113(f)(2) of CERCLA, or as may be otherwise provided by law, for the “matters addressed” in this Decree. The “matters addressed” in this Decree are the Work, Past Response Costs, Future Response Costs, State Past Response Costs, and State Future Response Costs, provided, however, that if the United States exercises rights under the reservations in ¶¶ 45.a through 45.g, the “matters addressed” in this Decree will no longer include those response costs or response actions that are within the scope of the exercised reservation.

55. Settling Defendant shall, with respect to any suit or claim brought by it for matters related to this Decree, notify DOJ and EPA and the State no later than 60 days prior to the initiation of such suit or claim. Settling Defendant shall, with respect to any suit or claim brought against it for matters related to this Decree, notify DOJ and EPA and the State within 10 days after service of the complaint on Settling Defendant. In addition, Settling Defendant shall notify DOJ and EPA and the State within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial.

56. **Res Judicata and Other Defenses.** In any subsequent administrative or judicial proceeding initiated against Settling Defendant by either Plaintiff for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendant shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, claim preclusion (res judicata), issue preclusion (collateral estoppel), claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case.

57. Nothing in this Decree diminishes the right of the United States under section 113(f)(2) and (3) of CERCLA to pursue any person not a party to this Decree to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to section 113(f)(2).

XVI. RECORDS

58. **Settling Defendant Certification.** Settling Defendant certifies that: (a) it has implemented a litigation hold on documents and electronically stored information relating to the Site, including information relating to its potential liability under CERCLA regarding the Site, since the earlier of notification of potential liability by the United States or the State or the filing of suit against it regarding the Site; and (b) it has fully complied with any and all EPA and State requests for information under sections 104(e) and 122(e) of CERCLA, and section 3007 of RCRA, and State law.

59. Retention of Records and Information

a. Settling Defendant shall retain, and instruct its contractors and agents to retain, the following documents and electronically stored data (“Records”) until 10 years after the Certification Completion of the Work under SOW ¶ [5.10] (the “Record Retention Period”):

- (1) All records regarding Settling Defendant’s liability under CERCLA regarding the Site;
- (2) All reports, plans, permits, and documents submitted to EPA in accordance with this Decree, including all underlying research and data; and
- (3) All data developed by, or on behalf of, Settling Defendant in the course of performing the Remedial Action.

b. Settling Defendant shall retain all Records regarding the liability of any person under CERCLA regarding the Site during the Record Retention Period.

c. At the end of the Record Retention Period, Settling Defendant shall notify EPA that it has 90 days to request the Settling Defendant’s Records subject to this Section. Settling Defendant shall retain and preserve its Records subject to this Section until 90 days after EPA’s receipt of the notice. These record retention requirements apply regardless of any corporate record retention policy.

60. Settling Defendant shall provide to EPA and the State, upon request, copies of all Records and information required to be retained under this Section. Settling Defendant shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

61. Privileged and Protected Claims

a. Settling Defendant may assert that all or part of a record requested by Plaintiffs is privileged or protected as provided under federal law, in lieu of providing the record, provided that Settling Defendant complies with ¶ 61.b, and except as provided in ¶ 61.c.

b. If Settling Defendant asserts a claim of privilege or protection, it shall provide Plaintiffs with the following information regarding such record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a record, Settling Defendant shall provide the record to Plaintiffs in redacted form to mask the privileged or protected portion only. Settling Defendant shall retain all records that they claim to be privileged or protected until Plaintiffs have had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in Settling Defendant's favor.

c. Settling Defendant shall not make any claim of privilege or protection regarding: (1) any data regarding the Site, including all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological or engineering data, or the portion of any other record that evidences conditions at or around the Site; or (2) the portion of any record that Settling Defendant is required to create or generate in accordance with this Decree.

62. **Confidential Business Information (CBI) Claims.** Settling Defendant may claim that all or part of a record provided to Plaintiffs under this Section is CBI to the extent permitted by and in accordance with section 104(e)(7) of CERCLA and 40 C.F.R. § 2.203(b). Settling Defendant shall segregate and shall clearly identify all records or parts thereof submitted under this Decree for which they claim is CBI by labeling each page or each electronic file "claimed as confidential business information" or "claimed as CBI." Records that Settling Defendant claims to be CBI will be afforded the protection specified in 40 C.F.R. part 2, subpart B. If no CBI claim accompanies records when they are submitted to EPA and the State, or if EPA notifies Settling Defendant that the records are not entitled to confidential treatment under the standards of section 104(e)(7) of CERCLA or 40 C.F.R. part 2, subpart B, the public may be given access to such records without further notice to Settling Defendant.

63. In any proceeding under this Decree, validated sampling or monitoring data generated in accordance with the SOW and reviewed and approved by EPA, if relevant to the proceeding, is admissible as evidence, without objection.

64. Notwithstanding any provision of this Decree, Plaintiffs retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XVII. NOTICES AND SUBMISSIONS

65. All agreements, approvals, consents, deliverables, modifications, notices, notifications, objections, proposals, reports, waivers, and requests specified in this Decree must be in writing unless otherwise specified. Whenever a notice is required to be given or a report or other document is required to be sent by one Party to another under this Decree, it must be sent as specified below. All notices under this Section are effective upon receipt, unless otherwise specified. In the case of emailed notices, there is a rebuttable presumption that such notices are received on the same day that they are sent. Any Party may change the method, person, or address applicable to it by providing notice of such change to all Parties.

As to DOJ: EES Case Management Unit
U.S. Department of Justice
Environment and Natural Resources Division
P.O. Box 7611
Washington, D.C. 20044-7611
eescdcopy.enrd@usdoj.gov
Re: DJ # _____

As to EPA: Director, Superfund & Emergency Mgmt. Division
U.S. Environmental Protection Agency, Region 7
11201 Renner Blvd.
Lenexa, KS 66219
Peterson.mary@epa.gov

and: Clint Sperry
EPA Project Coordinator
U.S. Environmental Protection Agency, Region 7
11201 Renner Blvd.
Lenexa, KS 66219
Sperry.clint@epa.gov
(913) 551-7157

**As to the Regional
Financial Management
Officer:** Erin Ramirez
Regional Finance Officer
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219
ramirez.erin@epa.gov

**As to EPA Cincinnati
Finance Center:** EPA Cincinnati Finance Center
26 W. Martin Luther King Drive
Cincinnati, Ohio 45268
cinwd_acctsreceivable@epa.gov

As to the State: Olufeyisayo Ilesanmi
State Project Coordinator
Missouri Department of Natural Resources
Environmental Remediation Program
P.O. Box 176
Jefferson City, Missouri 65102-0176
feyi.ilesanmi@dnr.mo.gov

**As to Settling
Defendant:** Barbara J. Miller
Ameren Project Coordinator
[address]
Bmiller2@ameren.com
[phone]

XVIII. APPENDIXES

66. The following appendixes are attached to and incorporated into this Decree:

“Appendix A” is the Record of Decision.

“Appendix B” is the SOW.

“Appendix C” is the map of the Site.

XIX. MODIFICATIONS TO DECREE

67. Except as provided in ¶ 8 of the Decree and ¶ [7.6] of the SOW (Approval of Deliverables), nonmaterial modifications to Sections I through XXIII and the Appendixes must be in writing and are effective when signed (including electronically signed) by the Parties. Material modifications to Sections I through XXIII and the Appendixes must be in writing, signed (which may include electronically signed) by the Parties, and are effective upon approval by the Court. As to changes to the remedy, a modification to the Decree, including the SOW, to implement an amendment to the Record of Decision that “fundamentally alters the basic features” of the Remedial Action within the meaning of 40 C.F.R. § 300.435(c)(2)(ii) will be considered a material modification.

XX. SIGNATORIES

68. The undersigned representative of the United States, the undersigned representative of the State, the undersigned representative of Settling Defendant certifies that he or she is fully authorized to enter into the terms and conditions of this Decree and to execute and legally bind such Party to this document.

XXI. PRE-ENTRY PROVISIONS

69. If for any reason the Court should decline to approve this Decree in the form presented, this agreement, except for ¶ 70 and ¶ 71, is voidable at the sole discretion of any Party and its terms may not be used as evidence in any litigation between the Parties.

70. This Decree will be lodged with the Court for at least 30 days for public notice and comment in accordance with section 122(d)(2) of CERCLA and 28 C.F.R. § 50.7. The United States may withdraw or withhold its consent if the comments regarding the Decree disclose facts or considerations that indicate that the Decree is inappropriate, improper, or inadequate.

71. Settling Defendant agrees not oppose or appeal the entry of this Decree.

XXII. INTEGRATION

72. This Decree constitutes the entire agreement among the Parties regarding the subject matter of the Decree and supersedes all prior representations, agreements, and understandings, whether oral or written, regarding the subject matter of the Decree.

XXIII. FINAL JUDGMENT

73. Upon entry of this Decree by the Court, this Decree constitutes a final judgment under Fed. R. Civ. P. 54 and 58 between the Parties.

SO ORDERED this ____ day of _____, 20__.

United States District Judge

Signature Page for CD regarding the Findett/Huster Road Groundwater Superfund Site

FOR THE UNITED STATES OF AMERICA:

Todd Kim
Assistant Attorney General
U.S. Department of Justice
Environment and Natural Resources Division
Washington, D.C. 20530

Dated

Nathaniel Douglas
Deputy Section Chief
Environmental Enforcement Section
U.S. Department of Justice
Environment and Natural Resources Division
P.O. Box 7611
Washington, D.C. 20044-7611

Rachel Hankey
Trial Attorney
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Enforcement Section
P.O. Box 7611
Washington, D.C. 20044-7611

**FOR THE U.S. ENVIRONMENTAL
PROTECTION AGENCY:**

Leslie Humphrey
Regional Counsel
U.S. Environmental Protection Agency
Region 7
11201 Renner Blvd.
Lenexa, KS 66219

Catherine Chiccine
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 7
11201 Renner Blvd.
Lenexa, KS 66219

Signature Page for CD regarding the Findett/Huster Road Groundwater Superfund Site

FOR THE STATE OF MISSOURI:

Dated

Timothy P. Duggan
Assistant Attorney General
Missouri Attorney General's Office
221 West High St
Jefferson City, MO 65101

Signature Page for CD regarding the Findett/Huster Road Groundwater Superfund Site

**FOR: UNION ELECTRIC CO. d/b/a AMEREN
MISSOURI**

Dated Name: _____
 Title: _____
 Address: _____

If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. **This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service.** Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

Name: _____
Title: _____
Company: _____
Address: _____

Phone: _____
email: _____

REMEDIAL DESIGN/REMEDIAL ACTION

STATEMENT OF WORK

FINDETT CORPORATION SUPERFUND SITE

OPERABLE UNIT 4

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1. INTRODUCTION

1.1 Purpose of SOW. This SOW sets forth the procedures and requirements for implementing the Work.

1.2 Structure of the SOW

- Section 2 (Community Involvement) sets forth EPA's and Settling Defendant's responsibilities for community involvement.
- Section 3 (Coordination and Supervision) contains the provisions for selecting the Supervising Contractor and Project Coordinators regarding the Work.
- Section 4 (Remedial Design) sets forth the process for developing the Remedial Design, which includes the submission of specified primary deliverables.
- Section 5 (Remedial Action) sets forth requirements regarding the completion of the Remedial Action, including primary deliverables related to completion of the Remedial Action.
- Section 6 (Reporting) sets forth Settling Defendant's reporting obligations.
- Section 7 (Deliverables) describes the contents of the supporting deliverables and the general requirements regarding Settling Defendant's submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 8 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the Remedial Action.
- Section 9 (State Participation) addresses State participation.
- Section 10 (References) provides a list of references, including URLs.

1.3 On June 30, 2021, the Findett OU4 (OU4) Record of Decision (ROD) was signed. The remedy addresses groundwater contaminated with volatile organic chemicals (VOCs) at the Ameren Missouri Huster Road Substation (Substation), located at 3800 Huster Road, St. Charles, Missouri, 63301. The Selected Remedy is Groundwater Monitoring, Enhanced In-Situ Bioaugmentation Attenuation (Enhanced Bio) and Groundwater Extraction and Treatment System (GETS), as needed, and Institutional Controls (ICs).

Most of the elements of the Selected Remedy were started as part of four pilot studies conducted between 2014 and 2018. The work performed during the pilot studies has reduced the size of the groundwater plume to a small area within the Substation. All groundwater north of the Substation is below the Safe Drinking Water Act maximum contaminant levels (MCLs) for all site contaminants of concern (COCs). For soil, although subsurface concentrations of some COCs at the Substation were elevated prior to the pilot studies, none of the concentrations detected after completion of the pilot studies poses unacceptable human health risks when compared to the EPA's risk-based Regional Screening Levels (RSLs) for a residential exposure scenario.

The Selected Remedy includes the following:

- Naturally occurring *Dehalococcoides*, an anerobic bacteria capable of reductive dechlorination, along with nutrients to support the bacteria (enhanced bioaugmentation) have been injected downgradient from the Substation's transformer number 2 (Transformer 2), creating an attenuation zone that reduces COCs as groundwater passes through the zone.
- The existing GETS, in operation since 2014, can be placed in stand-by status to allow the enhanced bioaugmentation to continue to reduce the contaminant plume. While in standby status, inspection and maintenance of the GETS may be necessary to keep the system operational.
- Ongoing monitoring will be performed to confirm ongoing degradation and evaluate the need for bioaugmentation. Wells demonstrating compliance with the MCLs for an extended period and no longer needed for monitoring would be removed from monitoring and abandoned in accordance with state requirements. The specific wells designated for this purpose would be identified in a groundwater monitoring plan.
- A remedial action of restarting the GETS, or additional enhanced bioaugmentation, or a combination of the two, must be implemented if the MCL is exceeded for one event for any COC found in groundwater outside of the Substation or there is an increasing Mann-Kendall¹ trend of any COC in groundwater inside the Substation for four consecutive quarters. The GETS and/or enhanced bioaugmentation would continue to be implemented until the groundwater COCs show a declining Mann-Kendall trend for four consecutive quarters.
- ICs in the form of an environmental covenant, or other equivalent proprietary control, will be executed and filed with the Recorder of Deeds Office, prohibiting the installation of potable water wells within or near the contaminant plume and construction of buildings within the Substation without prior notification to and approval by the EPA and the State.
- Engineering controls such as site or area berms and fencing to control exposure pathways. To ensure that public access to OU4 remains restricted, security measures will continue to be taken and documented at OU4, including fencing, locked gates, and restricted access to approved personnel.

The Scope of the Remedy includes the actions described in Part II, Section 19 of the ROD.

- 1.4** The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Consent Decree ("Decree"), have the meanings assigned to them in CERCLA, in such regulations, or in the Decree, except that the term "Paragraph" or "¶" means a paragraph of the SOW, and the term "Section" means a section of the SOW, unless otherwise stated.

¹ The Mann-Kendall Trend Test is used to analyze data collected over time for consistently increasing or decreasing trends.

2. COMMUNITY INVOLVEMENT

- 2.1 As requested by EPA, Settling Defendant shall conduct community involvement activities under EPA's oversight as provided for in, and in accordance with this Section. Such activities must include, if requested, designation of a Community Involvement Coordinator ("CI Coordinator") and implementation of a technical assistance plan.

2.2 Community Involvement Responsibilities

- (a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously, EPA developed a Community Involvement Plan ("CIP") for the Site. In accordance with 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities during the Work that are not already addressed or provided for in the existing CIP.
- (b) **Settling Defendant's CI Coordinator.** As requested by EPA, Settling Defendant shall, within 15 days, designate and notify EPA of Settling Defendant's CI Coordinator (Settling Defendant's CI Coordinator). Settling Defendant may hire a contractor for this purpose. Settling Defendant's notice must include the name, title, and qualifications of the Settling Defendant's CI Coordinator. Settling Defendant's CI Coordinator shall coordinate his/her activities with EPA's CI Coordinator, provide support regarding EPA's community involvement activities, and, as requested by EPA's CI Coordinator, provide draft responses to the public's inquiries including requests for information or data about the Site. The Settling Defendant's CI Coordinator has the responsibility to ensure that when they communicate with the public, the Settling Defendant protects any "Personally Identifiable Information" ("PII") (e.g. sample results from residential properties) in accordance with "EPA Policy 2151.0: Privacy Policy."
- (c) As requested by EPA, Settling Defendant shall participate in community involvement activities, including participation in: (1) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site (with interpreters present for community members with limited English proficiency); and (2) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification. Settling Defendant's support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to: (1) any Community Advisory Groups, (2) any Technical Assistance Grant ("TAG") recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Settling Defendant's responsibilities for community involvement activities. All community involvement activities conducted by Settling Defendant at EPA's request are subject to EPA's oversight. Upon EPA's request, Settling Defendant shall establish, as early as is feasible, a community information repository at or near the Site, as provided in the CIP, to house one copy of the administrative record.

- (d) **Information for the Community.** As requested by EPA, Settling Defendant shall develop and provide to EPA information about the design and implementation of the remedy including: (1) any validated data from monitoring of impacts to communities as provided in the Community Impact Mitigation Plan under ¶ 7.7(e); (2) results from validated sampling as provided under ¶ 7.7(d)(7); (3) a copy of the Community Impacts Mitigation Plan required under ¶ 7.7(e); (4) schedules prepared under Section 8; (5) dates that Settling Defendant completed each task listed in the schedules; and (6) digital photographs of the Work being performed, together with descriptions of the Work depicted in each photograph, the purpose of the Work, the equipment being used, and the location of the Work. The EPA Project Coordinator may use this information for communication to the public via EPA’s website, social media, or local and mass media. The information provided to EPA should be suitable for sharing with the public and the education levels of the community as indicated in EJ Screen. Translations should be in the dominant language(s) of community members with limited English proficiency.

2.3 Settling Defendant’s Responsibilities for Technical Assistance

- (a) At EPA’s request, Settling Defendant shall arrange for a qualified community group to receive the services of a technical advisor(s) who can: (1) help group members understand Site cleanup issues (specifically, to interpret and comment on Site-related documents developed under this SOW); and (2) share this information with others in the community. The technical advisor(s) will be independent from the Settling Defendant. Settling Defendant’s assistance will be limited to \$50,000, except as provided in ¶ 2.3(d)(3), and will end when EPA issues the Certification of Work Completion under ¶ 5.10. Settling Defendant shall implement this requirement under a Technical Assistance Plan (“TAP”).
- (b) At EPA’s request, Settling Defendant shall cooperate with EPA in soliciting interest from community groups regarding a TAP at the Site. If more than one community group expresses an interest in a TAP, Settling Defendant shall cooperate with EPA in encouraging the groups to submit a single, joint application for a TAP.
- (c) At EPA’s request, Settling Defendant shall, within 30 days, submit a proposed TAP for EPA approval. The TAP must describe the Settling Defendant’s plans for the qualified community group to receive independent technical assistance. The TAP must include the following elements:
- (1) For Settling Defendant to arrange for publication of a notice in local media that received a Letter of Intent (“LOI”) to submit an application for a TAP. The notice should explain how other interested groups may also try to combine efforts with the LOI group or submit their own applications, by a reasonable specified deadline;

- (2) For Settling Defendant to review the application(s) received and determine the eligibility of the community group(s). The proposed TAP must include eligibility criteria as follows:
 - (i) A community group is eligible if it is: (a) comprised of people who are affected by the release or threatened release at the Site; and (b) able to demonstrate its ability to adequately and responsibly manage TAP-related obligations.
 - (ii) A community group is ineligible if it is: (a) a potentially responsible party (PRP) at the Site, represents such a PRP, or receives money or services from a PRP (other than through the TAP); (b) affiliated with a national organization; (c) an academic institution; (d) a political subdivision; (e) a tribal government; (f) a group established or presently sustained by any of the above ineligible entities; or (g) a group in which any of the above ineligible entities is represented;
- (3) For Settling Defendant to notify EPA of determination on eligibility of the applicant group(s) to ensure that the determination is consistent with the SOW before notifying the group(s);
- (4) If more than one community group submits a timely application, for Settling Defendant to review each application and evaluate each application based on the following elements:
 - (i) The extent to which the group is representative of those persons affected by the Site; and
 - (ii) The effectiveness of the group's proposed system for managing TAP-related responsibilities, including its plans for working with its technical advisor and for sharing Site-related information with other members of the community.
- (5) For Settling Defendant to document evaluation of, and selection of, a qualified community group, and to brief EPA regarding evaluation process and choice. EPA may review Settling Defendant's evaluation process to determine whether the process satisfactorily follows the criteria in ¶ 2.3(c)(4). TAP assistance may be awarded to only one qualified group at a time;
- (6) For Settling Defendant to notify all applicant(s) about Settling Defendant's decision;
- (7) For Settling Defendant to designate a person (TAP Coordinator) to be their primary contact with the selected community group;

- (8) A description of Settling Defendant's plans to implement the requirements of ¶ 2.3(d) (Agreement with Selected Community Group); and
 - (9) For Settling Defendant to submit quarterly progress reports regarding the implementation of the TAP.
- (d) Agreement with Selected Community Group
- (1) Settling Defendant shall negotiate an agreement with the selected community group that specifies the duties of Settling Defendant and the community group. The agreement must specify the activities that may be reimbursed under the TAP and the activities that may not be reimbursed under the TAP. The list of allowable activities must be consistent with 40 C.F.R. § 35.4070 (*e.g.*, obtaining the services of an advisor to help the group understand the nature of the environmental and public health hazards at the Site and the various stages of the response action, and communicating Site information to others in the community). The list of non-allowable activities must be consistent with 40 C.F.R. § 35.4075 (*e.g.*, activities related to litigation or political lobbying).
 - (2) The agreement must provide that Settling Defendant's review of the Community Group's recommended choice for Technical Advisor will be limited, consistent with 40 C.F.R. §§ 35.4190 and 35.4195, to criteria such as whether the advisor has relevant knowledge, academic training, and relevant experience as well as the ability to translate technical information into terms the community can understand.
 - (3) The agreement must provide that the Community Group is eligible for additional TAP assistance, if it can demonstrate that it has effectively managed its TAP responsibilities to date, and that at least three of the following 10 factors are satisfied:
 - (i) EPA expects that more than eight years (beginning with the initiation of the RI/FS) will pass before construction completion will be achieved;
 - (ii) EPA requires treatability studies or evaluation of new and innovative technologies;
 - (iii) EPA reopens the Record of Decision;
 - (iv) The public health assessment (or related activities) for the Site indicates the need for further health investigations and/or health-related activities;
 - (v) After Settling Defendant's selection of the Community Group for the TAP, EPA designates additional operable units at the Site;

- (vi) EPA issues an Explanation of Significant Differences for the Record of Decision;
 - (vii) After Settling Defendant's selection of the Community Group, a legislative or regulatory change results in significant new Site information;
 - (viii) Significant public concern about the Site exists, as evidenced, *e.g.*, by relatively large turnout at meetings, the need for multiple meetings, the need for numerous copies of documents to inform community members, etc.;
 - (ix) Any other factor that, in EPA's judgment, indicates that the Site is unusually complex; or
 - (x) A RI/FS costing at least \$2 million was performed at the Site.
- (4) Settling Defendant entitled to retain any unobligated TAP funds upon EPA's Certification of Work Completion under ¶ 5.10.
 - (5) Settling Defendant shall submit a draft of the proposed agreement to EPA for its comments.

3. COORDINATION AND SUPERVISION

3.1 Project Coordinators

- (a) Settling Defendant's Project Coordinator must have sufficient technical expertise to coordinate the Work. Settling Defendant's Project Coordinator may not be an attorney representing Settling Defendant in this matter and may not act as the Supervising Contractor. Settling Defendant's Project Coordinator may assign other representatives, including other contractors, to assist in coordinating the Work.
- (b) EPA shall designate and notify the Settling Defendant of EPA's Project Coordinator and Alternate Project Coordinator. EPA may designate other representatives, which may include its employees, contractors, and/or consultants, to oversee the Work. EPA's Project Coordinator/Alternate Project Coordinator will have the same authority as a remedial project manager and/or an on-scene coordinator, as described in the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"). This includes the authority to halt the Work and/or to conduct or direct any necessary response action when it is determined that conditions at the Site constitute an emergency or may present an immediate threat to public health or welfare or the environment due to a release or threatened release of Waste Material.
- (c) The State shall designate and notify EPA and the Settling Defendant of its Project Coordinator and Alternate Project Coordinator. The State may designate other

representatives, including its employees, contractors and/or consultants to oversee the Work. For any meetings and inspections in which EPA's Project Coordinator participates, the State's Project Coordinator also may participate. Settling Defendant shall notify the State reasonably in advance of any such meetings or inspections.

- (d) Settling Defendant's Project Coordinators shall communicate with EPA's and the State's Project Coordinators at least quarterly.

3.2 Supervising Contractor. Settling Defendant's proposed Supervising Contractor must have sufficient technical expertise to supervise the Work and a quality assurance system that complies with the most recent version of *Quality Systems for Environmental Data and Technology Programs -- Requirements with Guidance for Use* (American National Standard), ANSI/ASQC E4 (Feb. 2014).

3.3 Procedures for Disapproval/Notice to Proceed

- (a) Settling Defendant shall designate, and notify EPA, within 10 days after the Effective Date, of the names, titles, contact information, and qualifications of the Settling Defendant's proposed Project Coordinator and Supervising Contractor, whose qualifications shall be subject to EPA's review for verification based on objective assessment criteria (*e.g.*, experience, capacity, technical expertise) and do not have a conflict of interest with respect to the project.
- (b) EPA shall issue notices of disapproval and/or authorizations to proceed regarding any proposed Project Coordinator and Supervising Contractor, as applicable. If EPA issues a notice of disapproval, Settling Defendant shall, within 30 days, submit to EPA a list of supplemental proposed Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. Settling Defendant may select any coordinator/contractor covered by an authorization to proceed and shall, within 21 days, notify EPA of Settling Defendant's selection.
- (c) EPA may disapprove the proposed Project Coordinator, the Supervising Contractor, or both, based on objective assessment criteria (*e.g.*, experience, capacity, technical expertise), if they have a conflict of interest regarding the project, or any combination of these factors.
- (d) Settling Defendant may change their Project Coordinator and/or Supervising Contractor, or both, by following the procedures of ¶¶ 3.3(a) and 3.3(b).

4. REMEDIAL DESIGN

4.1 Remedial Design Work Plan ("RDWP"). Settling Defendant shall submit a RDWP for EPA approval. The RDWP must include:

- (a) Plans for implementing all Remedial Design activities identified in this SOW, in the RDWP, or required by EPA to be conducted to develop the Remedial Design;

- (b) A description of the overall management strategy for performing the Remedial Design, including a proposal for phasing of design and construction, if applicable;
- (c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the Remedial Action as necessary to implement the Work;
- (d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the Remedial Design;
- (e) Descriptions of any areas requiring clarification and/or anticipated problems (e.g., data gaps);
- (f) Descriptions of any applicable permitting requirements and other regulatory requirements;
- (g) Description of plans for obtaining access in connection with the Work, such as property acquisition, property leases, and/or easements; and
- (h) The following supporting deliverables described in ¶ 7.7 (Supporting Deliverables): Health and Safety Plan and Emergency Response Plan.

4.2 Institutional Controls Implementation and Assurance Plan (“ICIAP”). Settling Defendant shall submit a proposed ICIAP for EPA approval. The ICIAP should describe plans to implement, maintain, monitor, and enforce the Institutional Controls (“ICs”) at the Site. The ICIAP shall include plans to commence implementing ICs as early as is feasible, including before EPA approval of the 100% design under ¶ 4.6. The ICIAP also should include procedures for effective and comprehensive review of implemented ICs, procedures for the solicitation of input from affected communities regarding the implementation of ICs, procedures to periodically review and determine if the ICs are having their intended effect, and if not, procedures for the development, approval and implementation of alternative, more effective ICs. Settling Defendant shall develop the ICIAP in accordance with *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), and *Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012). Settling Defendants also shall consider including in the ICIAP the establishment of effective Long-Term Stewardship procedures including those described in EPA Memorandum: *Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship* (July 20, 2018). The ICIAP must include the following additional requirements:

- (a) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and

- (b) Legal descriptions and survey maps that are prepared according to current American Land Title Association (“ALTA”) Survey guidelines and certified by a licensed surveyor.
- 4.3** Settling Defendant shall communicate regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.
- 4.4 Preliminary (30%) Remedial Design.** Settling Defendant shall submit a Preliminary (30%) Remedial Design for EPA’s comment. The Preliminary Remedial Design must include:
- (a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);
 - (b) Preliminary drawings and specifications;
 - (c) Descriptions of permit requirements, if applicable;
 - (d) Preliminary Operation and Maintenance (“O&M”) Plan and O&M Manual;
 - (e) A description of how the Remedial Action will be implemented in a manner that minimizes environmental impacts in accordance with EPA’s *Principles for Greener Cleanups* (Aug. 2009);
 - (f) A description of monitoring and control measures to protect human health and the environment, such as air monitoring, and measures to reduce and manage traffic, noise, odors, and dust, during the Remedial Action in accordance with the Community Involvement Handbook pp. 53-66 (text box on p. 55) to minimize community impacts;
 - (g) Any proposed revisions to the Remedial Action Schedule that is set forth in ¶ 8.3 (Remedial Action Schedule); and
 - (h) Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶ 7.7 (Supporting Deliverables): Field Sampling Plan; Quality Assurance Project Plan Site Wide Monitoring Plan; Community Impacts Mitigation Plan, Construction Quality Assurance/Quality Control Plan; Transportation and Off-Site Disposal Plan; O&M Plan; and O&M Manual.
- 4.5 Pre-Final (95%) Remedial Design.** Settling Defendant shall submit the Pre-final (95%) Remedial Design for EPA’s comment. The Pre-final Remedial Design must be a continuation and expansion of the previous design submittal and must address EPA’s comments regarding the Intermediate Remedial Design. The Pre-final Remedial Design will serve as the approved Final (100%) Remedial Design if EPA approves the Pre-final Remedial Design without comments. The Pre-final Remedial Design must include:

- (a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's Master Format 2012;
- (b) A survey and engineering drawings showing existing Site features, such as elements, property borders, easements, and Site conditions;
- (c) Pre-Final versions of the same elements and deliverables as are required for the Remedial Design;
- (d) A specification for photographic documentation of the Remedial Action; and
- (e) Updates of all supporting deliverables required to accompany the Preliminary (30%) Remedial Design.

4.6 Final (100%) Remedial Design. Settling Defendant shall submit the Final (100%) Remedial Design for EPA approval. The Final Remedial Design must address EPA's comments on the Pre-final Remedial Design and must include final versions of all Pre-final Remedial Design deliverables.

5. REMEDIAL ACTION

5.1 As stated above in Section 1.3, most of the elements of the Selected Remedy were started as part of four pilot studies conducted between 2014 and 2018. The work performed during the pilot studies has reduced the size of the groundwater plume to a small area within the Ameren Missouri Huster Road Substation. The remedy that is currently operating is groundwater monitoring and the injection of Dehalococcoides and/or operation of the GETS. Details of the injection and operation of the GETS is specified in Section 19 of the ROD. An environmental covenant is also stipulated in the ROD, but has not yet been executed or recorded.

5.2 Remedial Action Work Plan ("RAWP"). Settling Defendant shall submit a RAWP for EPA approval that includes:

- (a) A proposed Remedial Action Construction Schedule;
- (b) An updated health and safety plan that covers activities during the Remedial Action; and
- (c) Plans for satisfying permitting requirements, including obtaining permits for off-site activity and for satisfying substantive requirements of permits for on-site activity.

5.3 Permits

- (a) As provided in CERCLA § 121(e), and Section 300.400(e) of the NCP, no permit is required for any portion of the Work conducted entirely on-site (*i.e.*, within the areal extent of contamination or in very close proximity to the contamination and

necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Defendant shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

- (b) Settling Defendant may seek relief under the provisions of Section [XI] (Force Majeure) of the Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval referenced in ¶ 5.3(a) and required for the Work, provided that submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals.
- (c) Nothing in the Decree or this SOW constitutes a permit issued under any federal or state statute or regulation.

5.4 Emergency Response and Reporting

- (a) **Emergency Action.** If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Settling Defendant shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 5.4(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.
- (b) **Release Reporting.** Upon the occurrence of any event during performance of the Work that Settling Defendant is required to report under CERCLA § 103 or Section 304 of the Emergency Planning and Community Right-to-know Act (“EPCRA”), Settling Defendant shall immediately notify the authorized EPA officer orally.
- (c) The “authorized EPA officer” for purposes of immediate oral notifications and consultations under ¶ 5.4(a) and ¶ 5.4(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Response Unit, Region 7 (if neither EPA Project Coordinator is available).
- (d) For any event covered by ¶ 5.4(a) and ¶ 5.4(b), Settling Defendant shall:
 - (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and
 - (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.
- (e) The reporting requirements under ¶ 5.2 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

5.5 Off-Site Shipments

- (a) Settling Defendant may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with CERCLA § 121(d)(3), and 40 C.F.R. § 300.440. Settling Defendant will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Settling Defendant obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).
- (b) Settling Defendant may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, provide notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Settling Defendant also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Settling Defendant shall provide the notice after the award of the contract for Remedial Action construction and before the Waste Material is shipped.
- (c) Settling Defendant may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if in compliance with CERCLA § 121(d)(3), 40 C.F.R. § 300.440, *EPA's Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the Record of Decision. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

- 5.6 Proprietary Controls.** Settling Defendant shall, with respect to any Affected Property that is not owned by Settling Defendant, use best efforts to secure from such owner cooperation in executing and recording, in accordance with the procedures of this ¶ 5.6, Proprietary Controls that: (i) grant a right of access to conduct any activity regarding the Decree, including those activities listed in ¶ [12.b] of the Decree (Access Requirements); and (ii) grant the right to enforce the land, water, or other resource use restrictions set forth in ¶ [12.c] of the Decree (Restrictions). Any Settling Defendant that is an owner of any Affected Property ("Owner SD") shall, with respect to its Affected Property, execute and record, in accordance with the procedures of this ¶ 5.6, Proprietary Controls that: (i) grant a right of access to conduct any activity regarding the Decree, including those activities listed in ¶ [12.b] (Access Requirements); and (ii) grant the right to enforce the land, water, or other resource use restrictions set forth in ¶ [12.c] (Property Restrictions).

- (a) **Grantees.** The Proprietary Controls must be granted to one or more of the following persons and their representatives, as determined by EPA: the United States, the State, Settling Defendant, and other appropriate grantees. Proprietary Controls in the nature of a Uniform Environmental Covenants Act (“UECA”) document granted to persons other than the United States must include a designation that EPA (and/or the State as appropriate) is either an “agency” or a party expressly granted the right of access and the right to enforce the covenants allowing EPA and/or the State to maintain the right to enforce the Proprietary Controls without acquiring an interest in real property.
- (b) **Initial Title Evidence.** Settling Defendant shall, within 45 days after the Effective Date:
 - (1) **Record Title Evidence.** Submit to EPA a title insurance commitment or other title evidence acceptable to EPA that: (i) names the proposed insured or the party in whose favor the title evidence runs, or the party who will hold the real estate interest, or if that party is uncertain, names the United States, the State, the Settling Defendant, or “To Be Determined;” (ii) covers the Affected Property that is to be encumbered; (iii) demonstrates that the person or entity that will execute and record the Proprietary Controls is the owner of such Affected Property; (iv) identifies all record matters that affect title to the Affected Property, including all prior liens, claims, rights (such as easements), mortgages, and other encumbrances (collectively, “Prior Encumbrances”); and (v) includes complete, legible copies of such Prior Encumbrances; and
 - (2) **Non-Record Title Evidence.** Submit to EPA a report of the results of an investigation, including a physical inspection of the Affected Property, which identifies non-record matters that could affect the title, such as unrecorded leases or encroachments.
- (c) **Release or Subordination of Prior Liens, Claims, and Encumbrances**
 - (1) If any Prior Encumbrance may defeat or adversely affect the rights to be granted by the Proprietary Controls in a manner that could interfere with the remedy or result in unacceptable exposure to Waste Material, Settling Defendant shall consult with EPA regarding the release, subordination, modification, or relocation of such Prior Encumbrance.
- (d) **Update to Title Evidence and Recording of Proprietary Controls**
 - (1) Settling Defendant shall submit to all draft Proprietary Controls and draft instruments addressing Prior Encumbrances, if any, to EPA for review and approval within 180 days after the Effective Date.
 - (2) Upon EPA’s approval of the proposed Proprietary Controls, Settling Defendant shall, within 15 days, update the original title insurance commitment (or other evidence of title acceptable to EPA) under ¶ 5.6(b)

(Initial Title Evidence). If the updated title examination indicates that no liens, claims, rights, or encumbrances have been recorded since the effective date of the original commitment (or other title evidence), Settling Defendant shall secure the immediate recordation of the Proprietary Controls in the appropriate land records. Otherwise, Settling Defendant shall consult with EPA, in accordance with ¶ 5.6(c)(1) regarding any newly-discovered liens, claims, rights, and encumbrances, prior to recording the Proprietary Controls.

- (3) If Settling Defendant submitted a title insurance commitment under ¶ 5.6(b)(1) (Record Title Evidence), then upon the recording of the Proprietary Controls and instruments addressing Prior Encumbrances, if any, Settling Defendant shall obtain a title insurance policy that: (i) is consistent with the original title insurance commitment; (ii) is for \$100,000 or other amount approved by EPA; (iii) is issued to the United States, Settling Defendant, or other person approved by EPA; and (iv) is issued on a current American Land Title Association (“ALTA”) form or other form approved by EPA.
- (4) Settling Defendant shall, within 300 days after recording the Proprietary Controls and instruments addressing Prior Encumbrances, if any, or such other deadline approved by EPA, provide to the United States and to all grantees of the Proprietary Controls: (i) certified copies of the recorded Proprietary Controls and instruments addressing Prior Encumbrances, if any, showing the clerk’s recording stamps; and (ii) the title insurance policy(ies) or other approved form of updated title evidence dated as of the date of recording of the Proprietary Controls and instruments.
- (e) Settling Defendant shall monitor, maintain, enforce, and annually report on all Proprietary Controls required under this Decree.
- (f) Settling Defendant shall not Transfer its Affected Property unless it has executed and recorded all Proprietary Controls and all instruments addressing Prior Encumbrances required by EPA regarding such Affected Property in accordance with this Paragraph.

5.7 Remedial Action Construction Completion

- (a) For purposes of this ¶ 5.6, “Remedial Action Construction” comprises, for any Remedial Action that involves the construction and operation of a system to achieve Performance Standards (for example, groundwater or surface water restoration remedies), the construction of such system and the performance of all activities necessary for the system to function properly and as designed.
- (b) **Inspection of Constructed Remedy.** Settling Defendant shall schedule an inspection to review the construction and operation of the system and to review whether the system is functioning properly and as designed. The inspection must

be attended by Settling Defendant and EPA and/or their representatives. A reinspection must be conducted if requested by EPA.

- (c) **Shakedown Period.** There shall be a shakedown period of up to one year for EPA to review whether the remedy is functioning properly and performing as designed. Settling Defendant shall provide such information as EPA requests for such review.
- (d) **Remedial Action Report.** Following the shakedown period, Settling Defendant shall submit an “Remedial Action Report” requesting EPA’s determination that Remedial Action Construction has been completed. The Remedial Action Report must: (1) include statements by a registered professional engineer and by Settling Defendant’s Project Coordinator that the construction of the system is complete and that the system is functioning properly and as designed; (2) include a demonstration, and supporting documentation, that construction of the system is complete and that the system is functioning properly and as designed; (3) include as-built drawings signed and stamped by a registered professional engineer; (4) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA’s *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (5) be certified in accordance with ¶ 7.5 (Certification).
- (e) If EPA determines that Remedial Action Construction is not complete, EPA shall so notify Settling Defendant. EPA’s notice must include a description of, and schedule for, the activities that Settling Defendant must perform to complete Remedial Action Construction. EPA’s notice may include a schedule for completion of such activities or may require Settling Defendant to submit a proposed schedule for EPA approval. Settling Defendant shall perform all activities described in the EPA notice in accordance with the schedule.
- (f) If EPA determines, based on the initial or any subsequent Remedial Action Report, that Remedial Action Construction is complete, EPA shall so notify Settling Defendant.

5.8 Certification of Remedial Action Completion

- (a) **Monitoring Report.** Following the inspection, Settling Defendant shall submit a Monitoring Report to EPA requesting EPA’s Certification of Remedial Action Completion. The report must: (1) include certifications by a registered professional engineer and by Settling Defendant’s Project Coordinator that the Remedial Action is complete; (2) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA’s *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); (3) contain monitoring data to demonstrate that Performance Standards have been achieved; and (4) be certified in accordance with ¶ 7.5 (Certification).

- (b) If EPA concludes that the Remedial Action is not Complete, EPA shall so notify Settling Defendant. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require Settling Defendant to submit a schedule for EPA approval. Settling Defendant shall perform all activities described in the notice in accordance with the schedule.
- (c) If EPA concludes, based on the initial or any subsequent Monitoring Report requesting Certification of Remedial Action Completion, that the Remedial Action is Complete, EPA shall so certify to Settling Defendant. This certification will constitute the Certification of Remedial Action Completion for purposes of the Decree, including Section [XIV] of the Decree (Covenants by Plaintiffs). Certification of Remedial Action Completion will not affect Settling Defendant's remaining obligations under the Decree.

5.9 Periodic Review Support Plan ("PRSP"). Settling Defendant shall submit the PRSP for EPA approval. The PRSP addresses the studies and investigations that Settling Defendant shall conduct to support EPA's reviews of whether the Remedial Action is protective of human health and the environment in accordance with CERCLA § 121(c) (also known as "Five-year Reviews"). Settling Defendant shall develop the plan in accordance with *Comprehensive Five-year Review Guidance*, OSWER 9355.7-03B-P (June 2001), and any other relevant five-year review guidances.

5.10 Certification of Work Completion

- (a) **Work Completion Inspection.** Settling Defendant shall schedule an inspection for the purpose of obtaining EPA's Certification of Work Completion. The inspection must be attended by Settling Defendant and EPA and/or their representatives.
- (b) **Work Completion Report.** Following the inspection, Settling Defendant shall submit a report to EPA requesting EPA's Certification of Work Completion. The report must: (1) include certifications by a registered professional engineer and by Settling Defendant's Project Coordinator that the Work, including all O&M activities, is complete; and (2) be certified in accordance with ¶ 7.5 (Certification). If the Monitoring Report submitted under ¶ 5.8(a) includes all elements required under this ¶ 5.10(b), then the Monitoring Report suffices to satisfy all requirements under this ¶ 5.10(b).
- (c) If EPA concludes that the Work is not complete, EPA shall so notify Settling Defendant. EPA's notice must include a description of the activities that Settling Defendant must perform to complete the Work. EPA's notice must include specifications and a schedule for such activities or must require Settling Defendant to submit specifications and a schedule for EPA approval. Settling Defendant shall perform all activities described in the notice or in the EPA-approved specifications and schedule.

- (d) If EPA concludes, based on the initial or any subsequent report requesting Certification of Work Completion, that the Work is complete, EPA shall so certify in writing to Settling Defendant. Issuance of the Certification of Work Completion does not affect the following continuing obligations: (1) activities under the Periodic Review Support Plan; (2) obligations under Sections [VI] (Property Requirements), and [XVII] (Records) of the Decree; (3) Institutional Controls obligations as provided in the ICIAP; and (4) reimbursement of EPA's Future Response Costs under Section [IX] (Payments for Response Costs) of the Decree.

6. REPORTING

6.1 Progress Reports. Commencing with the month following lodging of the Decree and until EPA approves the Remedial Action Construction Completion, Settling Defendant shall submit progress reports to EPA on a quarterly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

- (a) The actions that have been taken toward achieving compliance with the Decree;
- (b) A summary of all results of sampling, tests, and all other data received or generated by Settling Defendant;
- (c) A description of all deliverables that Settling Defendant submitted to EPA;
- (d) A description of all activities relating to Remedial Action Construction that are scheduled for the next quarter;
- (e) An updated Remedial Action Construction Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;
- (f) A description of any modifications to the work plans or other schedules that Settling Defendant has proposed or that have been approved by EPA; and
- (g) A description of all activities undertaken in support of the Community Involvement Plan ("CIP") during the reporting period and those to be undertaken in the next quarter.

6.2 Notice of Progress Report Schedule Changes. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 6.1(d), changes, Settling Defendant shall notify EPA of such change at least seven days before performance of the activity.

7. DELIVERABLES

- 7.1 Applicability.** Settling Defendant shall submit deliverables for EPA approval or for EPA comment as specified in the SOW. If neither is specified, the deliverable does not require EPA's approval or comment. Paragraphs 7.2 (In Writing) through 7.4 (Technical Specifications) apply to all deliverables. Paragraph 7.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 7.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.
- 7.2 In Writing.** As provided in [¶ 82] of the Decree, all deliverables under this SOW must be in writing unless otherwise specified.
- 7.3 General Requirements for Deliverables.** All deliverables must be submitted by the deadlines in the Remedial Design Schedule or Remedial Action Schedule, as applicable. Settling Defendant shall submit all deliverables to EPA in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 7.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5" by 11", Settling Defendant shall also provide EPA with paper copies of such exhibits.
- 7.4 Technical Specifications**
- (a) Sampling and monitoring data should be submitted in standard regional Electronic Data Deliverable ("EDD") format. EPA Region 7 uses Scribe. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.
 - (b) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format Scribe, and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 ("NAD83") or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee ("FGDC") Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor ("EME"), complies with these FGDC and EPA metadata requirements and is available at <https://edg.epa.gov/EME/>.
 - (c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult <https://www.epa.gov/geospatial/geospatial-policies-and-standards> for any further available guidance on attribute identification and naming.
 - (d) Spatial data submitted by Settling Defendant does not, and is not intended to, define the boundaries of the Site.

- 7.5 Certification.** All deliverables that require compliance with this paragraph must be signed by the Settling Defendant's Project Coordinator, or other responsible official of Settling Defendant, and must contain the following statement:

I certify under penalty of perjury that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.6 Approval of Deliverables

(a) Initial Submissions

- (1) After review of any deliverable that is required to be submitted for EPA approval under the Decree or the SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.
- (2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

- (b) Resubmissions.** Upon receipt of a notice of disapproval under ¶ 7.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 7.6(a), Settling Defendant shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring Settling Defendant to correct the deficiencies; or (5) any combination of the foregoing.
- (c) Implementation.** Upon approval, approval upon conditions, or modification by EPA under ¶ 7.6(a) (Initial Submissions) or ¶ 7.6(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Decree; and (2) Settling Defendant

shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under ¶ 7.6(a) or ¶ 7.6(b) does not relieve Settling Defendant of any liability for stipulated penalties under Section [XIII] (Stipulated Penalties) of the Decree.

- (d) If: (1) an initially submitted deliverable contains a material defect and the conditions are met for modifying the deliverable under ¶ 7.6(a)(2); or (2) a resubmitted deliverable contains a material defect; then the material defect constitutes a lack of compliance for purposes of this Paragraph.

7.7 Supporting Deliverables. Settling Defendant shall submit each of the following supporting deliverables for EPA approval, except as specifically provided. Settling Defendant shall develop the deliverables in accordance with all applicable regulations, guidances, and policies (see Section 10 (References)). Settling Defendant shall update each of these supporting deliverables as necessary or appropriate during the course of the Work, and/or as requested by EPA.

- (a) **Health and Safety Plan (“HASP”).** The HASP describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by the Work. Settling Defendant shall develop the HASP in accordance with EPA’s *Emergency Responder Health and Safety Manual* and Occupational Safety and Health Administration (“OSHA”) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP should cover Remedial Design activities and should be, as appropriate, updated to cover activities during the Remedial Action and updated to cover activities after Remedial Action completion. EPA does not approve the HASP but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.
- (b) **Emergency Response Plan (“ERP”).** The ERP must describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERP must include:
 - (1) Name of the person or entity responsible for responding in the event of an emergency incident;
 - (2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;
 - (3) Spill Prevention, Control, and Countermeasures (“SPCC”) Plan (if applicable), consistent with the regulations under 40 C.F.R. part 112, describing measures to prevent, and contingency plans for, spills and discharges;

- (4) Notification activities in accordance with ¶ 5.4(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under CERCLA § 103 or EPCRA § 304; and
 - (5) A description of all necessary actions to ensure compliance with ¶ 5.4 of the SOW in the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.
- (c) **Quality Assurance Project Plan (“QAPP”).** The QAPP must include a detailed explanation of Settling Defendant’s quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. Settling Defendant shall develop the QAPP in accordance with EPA Directive CIO 2105.1 (Environmental Information Quality Policy, 2021), the most recent version of *Quality Management Systems for Environmental Information and Technology Programs – Requirements with Guidance for Use*, ASQ/ANSI E-4 (Feb. 2014, and *Guidance for Quality Assurance Project Plans*, EPA QA/G-5, EPA Office of Environmental Information (Dec. 2002). Settling Defendant shall collect, produce, and evaluate all environmental information at the Site in accordance with the approved QAPP.
- (d) **Site Wide Monitoring Plan (“SWMP”).** The purpose of the SWMP is to obtain baseline information regarding the extent of contamination in affected media at the Site; to obtain information, through short- and long- term monitoring, about the movement of and changes in contamination throughout the Site, before and during implementation of the Remedial Action; to obtain information regarding contamination levels to determine whether Performance Standards are achieved; and to obtain information to determine whether to perform additional actions, including further Site monitoring. The SWMP must include:
- (1) Description of the environmental media to be monitored;
 - (2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of monitoring, analytical parameters to be monitored, and analytical methods employed;
 - (3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Site-related requirements;
 - (4) Description of verification sampling procedures;
 - (5) Description of deliverables that will be generated in connection with monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to EPA and State agencies;

- (6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement);
 - (7) A plan to immediately provide to EPA any unvalidated sampling data from Community Areas as defined in ¶ 7.7(e) affected by the remedy that exceed removal management levels or three times remedial cleanup levels, whichever is lower; and
 - (8) A plan to expedite sampling and analysis in Community Areas as defined in ¶ 7.7(e) affected by the remedy (particularly in situations where EPA determines that unvalidated sampling data indicates substantial exceedances of cleanup standards), including procedures for expedited analysis, validation, and communication of sampling results to affected communities.
- (e) **Community Impact Mitigation Plan (“CIMP”).** The CIMP describes all activities to be performed: (1) to reduce and manage the impacts from remedy implementation (*e.g.*, air emissions, traffic, noise, odor, temporary or permanent relocation) to residential areas, schools, playgrounds, healthcare facilities, or recreational or impacted public areas (“Community Areas”) from and during remedy implementation, (2) to conduct monitoring in Community Areas of impacts from remedy implementation, (3) to expeditiously communicate validated remedy implementation monitoring data, (4) to make adjustments during remedy implementation in order to further reduce and manage impacts from remedy implementation to affected Community Areas, (5) to expeditiously restore community resources damaged during remediation such as roads and culverts, and (6) to mitigate the economic effects that the Remedial Action will have on the community by structuring remediation contracts to allow more local business participation. The CIMP should contain information about impacts to Community Areas that is sufficient to assist EPA’s Project Coordinator in performing the evaluations recommended under the *Superfund Community Involvement Handbook*, OLEM 9230.0-51 (March 2020), pp. 53-56.
- (f) **O&M Plan.** The O&M Plan describes the requirements for inspecting, operating, and maintaining the Remedial Action. Settling Defendant shall develop the O&M Plan in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include the following additional requirements:
- (1) Description of Performance Standards required to be met to implement the Record of Decision;

- (2) Description of activities to be performed: (i) to provide confidence that Performance Standards will be met; and (ii) to determine whether Performance Standards have been met;
 - (3) **O&M Reporting.** Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;
 - (4) Description of corrective action in case of systems failure, including: (i) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve Performance Standards; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and
 - (5) Description of corrective action to be implemented in the event that Performance Standards are not achieved; and a schedule for implementing these corrective actions.
- (g) **O&M Manual.** The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. Settling Defendant shall develop the O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).

8. SCHEDULES

- 8.1 Applicability and Revisions.** All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the Remedial Design and Remedial Action Schedules set forth below. Settling Defendant may submit proposed revised Remedial Design Schedules or Remedial Action Schedules for EPA approval. Upon EPA's approval, the revised Remedial Design and/or Remedial Action Schedules supersede the Remedial Design and Remedial Action Schedules set forth below, and any previously-approved Remedial Design and/or Remedial Action Schedules.

8.2 Remedial Design Schedule

	Description of Deliverable, Task	¶ Ref.	Deadline
1	TAP	2.3(c)	30 days after EPA request
2	Designate TAP Coordinator	2.3(c)(7)	30 days after EPA request
3	RDWP	4.1	60 days after EPA's Authorization to Proceed regarding Supervising Contractor (¶ 9.c).
4	ICIAP	4.2	60 days after EPA Authorization to Proceed regarding Supervising Contractor (¶ 9.c).
5	Preliminary (30%) Remedial Design	4.4	90 days after EPA approval of Final RDWP
6	Pre-final (90/95%) Remedial Design	4.5	60 days after EPA comments on Preliminary or Remedial Design
7	Final (100%) Remedial Design	4.6	60 days after EPA comments on Pre-final Remedial Design

8.3 Remedial Action Schedule

	Description of Deliverable / Task	¶ Ref.	Deadline
1	Commence to Implement ICIAP	4.2	30 days after EPA Notice of Authorization to Proceed with ICIAP
3	RAWP	5.1	60 days after EPA Notice of Authorization to Proceed with Remedial Action
2	Final Inspection		90 days after Final (100%) Remedial Design
3	Remedial Action Report	5.7(d)	90 days after Final Inspection
4	Monitoring Report	5.8(a)	Monitoring will vary according to whatever is written in the RA Work Plan
5	Work Completion Report	5.10(b)	If this is the Remedial Action Completion Report (RACR), then this completed by the EPA after the Operational and Functional (O&F) determination (inspection after one year of operation) by the EPA.
6	Periodic Review Support Plan	5.9	Five years after Start of Remedial Action Construction

9. STATE PARTICIPATION

- 9.1 Copies.** Settling Defendant shall, at any time they send a deliverable to EPA, send a copy of such deliverable to the State. EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Settling Defendant, send a copy of such document to the State.

9.2 Review and Comment. The State will have a reasonable opportunity for review and comment prior to:

- (a) Any EPA notice to proceed under ¶ 3.3 (Procedures for Disapproval/Notice to Proceed);
- (b) Any EPA approval or disapproval under ¶ 7.6 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and
- (c) Any approval or disapproval of the Construction Phase under ¶ 5.6 (Remedial Action Construction Completion), any disapproval of, or Certification of Remedial Action Completion under ¶ 5.8 (Certification of Remedial Action Completion), and any disapproval of, or Certification of Work Completion under ¶ 5.10 (Certification of Work Completion).

10. REFERENCES

10.1 The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the three EPA web pages listed in ¶ 10.2:

- (a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).
- (b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).
- (c) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G-89/004 (Oct. 1988).
- (d) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).
- (e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G90/001 (Apr. 1990).
- (f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).
- (g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).
- (h) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).
- (i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R-92/071A (Nov. 1992).

- (j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. part 300 (Oct. 1994).
- (k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).
- (l) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).
- (m) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).
- (n) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, EPA/540-R-01-007 (June 2001).
- (o) Guidance for Quality Assurance Project Plans, EPA QA/G-5, EPA Office of Environmental Information (Dec. 2002) <https://www.epa.gov/quality/guidance-quality-assurance-project-plans-epa-qag-5>.
- (p) Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls, OECA (Apr. 2004).
- (q) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).
- (r) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).
- (s) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2005), <https://www.epa.gov/geospatial/epa-national-geospatial-data-policy>.
- (t) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).
- (u) Principles for Greener Cleanups (Aug. 2009), <https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups>.
- (v) [Providing Communities with Opportunities for Independent Technical Assistance in Superfund Settlements, Interim (Sep. 2009).
- (w) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).
- (x) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).
- (y) Recommended Evaluation of Institutional Controls: Supplement to the “Comprehensive Five-Year Review Guidance,” OSWER 9355.7-18 (Sep. 2011).

- (z) Plan EJ 2014: Legal Tools, EPA Office of General Counsel (Dec. 2011), <https://www.epa.gov/environmentaljustice/plan-ej-2014-legal-tools>.
- (aa) Construction Specifications Institute's MasterFormat, available from the Construction Specifications Institute, <http://www.csinet.org/masterformat>.
- (bb) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)
- (cc) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), <https://semspub.epa.gov/work/HQ/175446.pdf>.
- (dd) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012), <https://semspub.epa.gov/work/HQ/175449.pdf>.
- (ee) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), https://www.epaossc.org/_HealthSafetyManual/manual-index.htm.
- (ff) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).
- (gg) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).
- (hh) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).
- (ii) Quality Management Systems for Environmental Information and Technology Programs -- Requirements with Guidance for Use, ASQ/ANSI E-4 (February 2014), available at <https://webstore.ansi.org/>.
- (jj) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), <https://www.epa.gov/superfund/superfund-post-construction-completion>.
- (kk) Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship (July 20, 2018), <https://www.epa.gov/enforcement/use-advanced-monitoring-technologies-and-approaches-support-long-term-stewardship>.
- (ll) Superfund Community Involvement Handbook, OLEM 9230.0-51 (March 2020). More information on Superfund community involvement is available on the Agency's Superfund Community Involvement Tools and Resources web page at <https://www.epa.gov/superfund/superfund-community-involvement-tools-and-resources>.

(mm) EPA directive CIO 2105.1 (Environmental Information Quality Policy, 2021), https://www.epa.gov/sites/production/files/2021-04/documents/environmental_information_quality_policy.pdf.

10.2 A more complete list may be found on the following EPA web pages:

- (a) Laws, Policy, and Guidance at <https://www.epa.gov/superfund/superfund-policy-guidance-and-laws>;
- (b) Search Superfund Documents at <https://www.epa.gov/superfund/search-superfund-documents>; and
- (c) Test Methods Collections at: <https://www.epa.gov/measurements/collection-methods>.

10.3 For any regulation or guidance referenced in the Decree or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Settling Defendant receive notification from EPA of the modification, amendment, or replacement.

Figure 1 – Findett Site



RECORD OF DECISION

FINDETT OPERABLE UNIT 4

HUSTER ROAD SUBSTATION

ST. CHARLES, MISSOURI



Prepared by:

**U. S. Environmental Protection Agency
Region 7
11201 Renner Blvd
Lenexa, Kansas 66219**

June 30, 2021

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APPENDIX D – MISSOURI DEPARTMENT OF NATURAL RESOURCES PROPOSED PLAN ACCEPTANCE LETTER

LIST OF ACRONYMS

AR	Administrative Record
ARAR	Applicable or Relevant and Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
CDI	chronic daily intake
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	contaminants of concern
COPCs	contaminants of potential concern
CSM	conceptual site model
DCE	dichloroethylene
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
ft	foot
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
ICs	Institutional controls
IRIS	Integrated Risk Information System
MCL	maximum contaminant level
mg/kg	milligram per kilogram
MoDNR	Missouri Department of Natural Resources
MRL	minimum risk levels
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	operation and maintenance
PCE	tetrachloroethylene
PRP	Potentially Responsible Party
RAOs	Remedial Action Objectives
RAR	Removal Assessment Report
RD	Remedial Design
RfC	reference concentration
RfD	reference dose
RI	Remedial Investigation
ROD	Record of Decision
RSL	Regional Screening Level
SF	slope factor
SLERA	Screening Level Ecological Risk Assessment
TCE	trichloroethylene
µg/L	micrograms per liter
VC	vinyl chloride
yd ³	cubic yards
ZVI	Zero Valent Iron

PART 1: DECLARATION

1.0 Site Name and Location

Site Name: Findett Corporation/Hayford Bridge Road
Operable Unit: 4, Huster Road Substation
Site Location: St. Charles, Missouri
Lead Agency: U.S. Environmental Protection Agency
Support Agency: Missouri Department of Natural Resources
Site Identification Number: MOD006333975

2.0 Statement of Basis and Purpose

This decision document presents the Selected Remedy for the Ameren Missouri Huster Road Substation (Operable Unit 4 (OU4)) of the Findett Corporation/Hayford Bridge Road Site (Site) in St. Charles, Missouri (Appendix B, Figure 1). The decision represented in this document was made in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 as amended, 42 U.S.C. § 9601 *et seq.*, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 C.F.R. part 300.

This decision is based on the Administrative Record (AR) for the Site, which has been developed in accordance with Section 113(k) of CERCLA, 42 U.S.C. § 9613(k). This AR file is available for review online at <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0700845>, and at the U.S. Environmental Protection Agency Region 7 Records Center, 11201 Renner Boulevard, Lenexa, Kansas 66219.

The state of Missouri (state), through the Missouri Department of Natural Resources (MoDNR), concurs with the Selected Remedy. MoDNR's concurrence with the preferred remedial alternative as set forth in the Proposed Plan, and chosen as the Selected Remedy in this ROD is included in Appendix D.

3.0 Assessment of the Site

The response action selected in this Record of Decision (ROD) is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

4.0 Description of the Selected Remedy

OU4 addresses groundwater contaminated with volatile organic chemicals (VOCs) at the Ameren Missouri Huster Road Substation (Substation). The Selected Remedy is Enhanced In-Situ Bioaugmentation Attenuation (Enhanced Bio) and Groundwater Extraction and Treatment System (GETS), as needed; and Institutional Controls (ICs).

Most of the elements of the Selected Remedy were started as part of four pilot studies conducted between 2014 and 2018. The work performed during the pilot studies has reduced the size of the groundwater plume to a small area within the Substation. All groundwater north of the Substation is below the Safe Drinking Water Act maximum contaminant levels (MCLs) for all Site contaminants of concern (COCs). For soil, although subsurface concentrations of some COCs at the Substation were elevated prior to the pilot studies, none of the concentrations detected after completion of the pilot

studies pose unacceptable human health risks when compared to the EPA's risk-based Regional Screening Levels (RSLs) for a residential exposure scenario.

The Selected Remedy includes the following:

- Naturally occurring *Dehalococcoides*, an anerobic bacteria capable of reductive dechlorination, along with nutrients to support the bacteria (enhanced bioaugmentation), have been injected downgradient from the Substation's transformer number 2 (Transformer 2), creating an attenuation zone that reduces COCs as groundwater passes through the zone.
- The existing GETS, in operation since 2014, can be placed in stand-by status to allow the enhanced bioaugmentation to continue to reduce the contaminant plume. While in standby status, inspection and maintenance of the GETS may be necessary to keep the system operational.
- Ongoing monitoring will be performed to confirm ongoing degradation and evaluate the need for additional bioaugmentation. Wells demonstrating compliance with the MCLs for an extended period and no longer needed for monitoring will be removed from monitoring and abandoned in accordance with state requirements. The specific wells designated for this purpose will be identified in a groundwater monitoring plan.
- A remedial action of restarting the GETS or additional enhanced bioaugmentation, or a combination of the two, must be implemented if the MCL is exceeded for one event for any COC found in groundwater outside the Substation or there is an increasing Mann-Kendall¹ trend of any COC in groundwater inside the Substation for four consecutive quarters. The GETS and/or enhanced bioaugmentation would continue to be implemented until the groundwater COCs show a declining Mann-Kendall trend for four consecutive quarters.
- ICs in the form of an environmental covenant, or other equivalent proprietary control, will be executed and filed with the Recorder of Deeds Office, prohibiting the installation of potable water wells within or near the contaminant plume and construction of buildings within the Substation without prior notification of and approval by the EPA and the state.
- Engineering controls such as site or area berms and fencing to control exposure pathways will be implemented as needed. To ensure that public access to OU4 remains restricted, security measures will continue to be taken and documented at OU4, including fencing, locked gates, and restricted access to approved personnel.

Current estimates indicate that cleanup levels will be attained throughout the contaminated portion of the aquifer within a reasonable time frame of less than ten years. The total present worth cost for the Selected Remedy is \$265,000. (See table below.)

Bio per Application	\$35,000
GETS Annual O&M Cost	\$130,000
Annual Groundwater Monitoring	\$100,000
Annual Present Worth Cost	\$265,000
Time to Meet RAOs	<10 years

Actions performed under multiple Orders on Consent and pilot studies voluntarily performed by the sole potentially responsible party (PRP), Ameren Missouri (Ameren), have resulted in attaining the remedial action objectives (RAOs) for groundwater north of the Substation and have made significant progress toward those goals within the Substation. RAOs for soil are not required because contaminant levels

¹ The Mann-Kendall Trend Test is used to analyze data collected over time for consistently increasing or decreasing trends.

have been reduced through the pilot studies to concentrations that no longer pose an unacceptable risk to human health or the environment.

RAOs developed for contaminated groundwater for human health protection include:

- Prevent exposure to COCs above their MCLs in groundwater;
- Prevent potential future risks to human receptors from inhalation of groundwater COCs via the vapor intrusion pathway;
- Prevent future migration of groundwater contamination off-site; and
- Restore groundwater to beneficial use (i.e., at or below MCLs) within a reasonable timeframe.

The Selected Remedy will: (1) be protective of human health and the environment; (2) comply with Applicable or Relevant and Appropriate Requirements (ARARs); (3) be cost effective; and (4) utilize permanent solutions and alternative treatment technologies to the maximum extent practicable.

5.0 Declaration of Statutory Determinations

The Selected Remedy is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

The Selected Remedy also satisfies the statutory preference for treatment of principal threats as a principal element of the remedy (i.e., reduces the toxicity, mobility, or volume of hazardous substances, pollutants or contaminants as a principal element through treatment). Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

6.0 ROD Data Certification Checklist

The following information is included in the Decision Summary section of this ROD (Part II). Additional information can be found in the AR file for this Site.

1	Site Name, Location and Description	Section 8
2	Site History and Enforcement Activities	Section 9
3	Community Participation	Section 10
4	Scope and Role of the Response Actions	Section 11
5	Site Characteristics	Section 12
6	Current and Potential Future Land and Water Uses	Section 13
7	Summary of Site Risks	Section 14
8	Remedial Action Objectives	Section 15
9	Description of Remedial Alternatives	Section 16
10	Comparative Analysis of Alternatives	Section 17
11	Principal Threat Waste	Section 18

12	Selected Remedy	Section 19
13	Statutory Determinations	Section 20
14	Documentation of Significant Changes	Section 21

7.0 Authorizing Signature

This ROD documents the Selected Remedy for OU4 of the Findett Corporation/Hayford Bridge Road Superfund Site. This remedy was selected by the EPA with the support of MoDNR. The Director of the Superfund and Emergency Management Division for the EPA, Region 7 has been delegated the authority to approve and sign this ROD.

MARY
PETERSON

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Date: 2021.06.30
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Mary P. Peterson, Director
Superfund & Emergency Management Division

PART II: DECISION SUMMARY

8.0 Site Name, Location and Description

The Site is divided into four operable units (OUs): OU1 addresses the soil and groundwater contamination on the property owned by Findett Real Estate Corporation (Findett);² OU2 addresses the soil contamination on the property formerly owned by Cadmus Corporation (Cadmus), now owned by Findett; OU3 addresses affected groundwater that has migrated off site of the OU1/OU2 property boundaries; and OU4 is a separate and distinct contaminated soil source area and groundwater plume under the Substation.

The Substation, OU4, of the Site, is located at 3800 Huster Road, St. Charles, Missouri 63301. It is an active electrical distribution and transmission substation. The Substation was originally constructed in 1963 and, with subsequent expansions, now encompasses approximately 8 acres. The Substation property contains a control house, three transformers, two capacitor banks, and associated equipment, including a copper grounding grid embedded within crushed limestone. The Substation is situated within the Missouri River alluvial valley and is adjacent to the City of St. Charles (City) Elm Point Wellfield, specifically City Wells 4 and 5. City Wells 6, 7, and a radial well, City Well 9, are located north of the Substation. The newly-installed City Well 10 is east of the Substation. (See Appendix B, Figure 2.)

The EPA is the lead Agency for the Site, and MoDNR is the support Agency. Ameren is the sole PRP for OU4 and is performing and funding its cleanup.

9.0 Site History and Enforcement Activities

The Site originally came to the EPA's attention in the late 1970s when Findett reported handling polychlorinated biphenyls (PCBs). During an EPA inspection, an unlined "quench pond" was identified on the boundary between the properties owned by Findett and an affiliated company, Cadmus. Findett used the quench pond for release of hot residues from its recycling processes. In 1977 and 1981, Findett excavated the pond and disposed of the contaminated soils off-site. The PCB contamination in the surface soils was the primary concern in those early years of activity at the Site. Subsequent investigations identified that VOC contamination existed in the subsurface soils and groundwater.

OU1

In 1984, the EPA proposed the Site for inclusion on the National Priorities List (NPL) of hazardous waste sites, mainly due to the potential exposure to contaminated groundwater of the nearby Elm Point Wellfield, which is a drinking water source for the City. The proposal was later withdrawn due to potential overlapping jurisdiction with the EPA's Resource Conservation and Recovery Act. However, a ROD and corresponding Consent Decree with Findett were in place before the withdrawal. As a result, the EPA has continued to manage the Site as an "NPL-caliber" site using Superfund authority. Management of an NPL-caliber site follows the same Superfund process as a site on the NPL, without the access to federal funding.

The OU1 ROD, signed on December 28, 1988, did not explicitly define RAOs. However, the ROD indicated that the goal of the remedy was to contain OU1 contamination in the shallow aquifer.

² Findett Corporation has changed names a number of times throughout the years. In the 1960s, it was incorporated in Missouri as Findett Services Corporation, it later changed its name to Findett Corporation, and currently exists as Findett Real Estate Corporation. For ease of reference, the term "Findett" collectively refers to the Findett entities.

The selected remedial actions included:

- Hydraulic control of the shallow contaminated plume using groundwater extraction wells screened in the upper granular unit;
- Groundwater treatment using air stripping to remove organic contaminants, with an option for further treatment of groundwater using Granular Activated Carbon (GAC);
- Discharge of treated groundwater to the sewage treatment plant; and
- Off-site disposal and treatment of contaminated surface and near-surface soil excavated around the Findett Quench Pond.

By October 1991, the EPA and the City approved the construction and operation of the GETS. That remedial action is presently ongoing.

A ROD Amendment for OU1 was signed on September 25, 1995, to address the soils, which allowed for bio-remediation of PCBs, but if the performance standards were not achieved on schedule, then the original excavation and off-site disposal remedy would be implemented. Eventually Findett proposed ending the biotreatment effort and conducted the excavation and off-site disposal of the PCBs based upon logistical and schedule issues for Findett, rather than upon the results of the biotreatment process. The EPA and MoDNR approved the corresponding work plans, resulting in completion of the soils remedial action in April 2003.

OU2

In 1995, the EPA completed an evaluation of the Cadmus property, designated as OU2, which resulted in an Engineering Evaluation/Cost Analysis (EE/CA) to address the PCB-contaminated soil at the Site. The OU2 Removal Action Memo, signed on November 7, 1995, does not explicitly define RAOs. However, the proposed removal action included excavation and offsite disposal of all soils contaminated with PCBs above 25 parts per million (ppm) and located above the water table at the Cadmus property.

Soil removal was completed on April 18, 2003. No PCBs remain at the Site above the 25 ppm level.

OU3

Contaminants, including benzene, vinyl chloride (VC), *cis*-1,2-dichloroethylene (*cis*-1,2-DCE) (commonly known as 1,2-dicholoroethylene), and chloroethane, were found in monitoring wells above MCLs located just north of the Findett property and migrating towards the Elm Point Wellfield, which serves as the source of drinking water for the City. This groundwater plume was identified and addressed as OU3. The OU3 ROD was signed on September 28, 2005. The RAO for the OU was to protect human health by eliminating exposure to groundwater contaminated above regulatory standards or risk-based standards for site-related contaminants.

On July 3, 2007, the court entered a Consent Decree requiring the Hayford Bridge Road responsible parties (Findett Real Estate Corporation, The Goodyear Tire & Rubber Company, General Motors Corporation, ACF LLC, Mallinckrodt Inc., and Pharmacia Corporation, collectively “OU3 RPs”) to implement the Monitored Natural Attenuation remedy, consistent with the 2005 ROD. The design was completed in April 2008, and the construction of the monitoring well network was completed during the summer of 2008. The Remedial Design/ Remedial Action Construction Completion Report was submitted in December 2008, which the EPA conditionally approved in May 2009. The city ordinance

to implement the required groundwater ICs was approved in February 2010.

OU4

In June 2010, *cis*-1,2-DCE was detected in City Well 5 of the Elm Point Wellfield, located approximately 180-200 feet north of the Substation boundary. Between 2011 and 2015, a group of PRPs performed additional investigations and response actions to address this contamination. Based on the analytical data collected by the PRPs in 2011, as well as independent testing by Ameren in 2012, the EPA identified OU4 as a separate and distinct source of contamination contributing significantly to the contamination in the Elm Point Wellfield. Ameren previously used a chlorinated solvent for degreasing and metal cleaning at the Substation. The solvent was manufactured by Mozel Chemical Company and contained approximately 18% tetrachloroethylene (PCE) and mineral spirits. The EPA determined that Ameren was the sole PRP responsible for OU4's contamination.

On December 28, 2012, the EPA and Ameren entered into a Settlement Agreement and Administrative Order on Consent (2012 AOC) to:

- Perform soil and groundwater sampling at the Substation to determine to what extent the Substation property is a source of contamination contributing to the existing OU3 groundwater plume;
- Contain and treat contaminated groundwater migrating off the Substation property; and
- Evaluate future remedial and removal actions.

Based upon the results of the investigations, Ameren implemented a series of pilot studies that evaluated several soil and groundwater treatment options and installed a GETS along the northern border of the Substation property.

On January 2, 2018, the EPA, Ameren, and MoDNR entered into an Administrative Settlement Agreement and Order on Consent (2018 ASAOC) to document the remedial investigation (RI) and feasibility study (FS) Ameren had already completed. The RI Report was finalized on May 1, 2019. The FS Report was finalized on March 2, 2020.

10.0 Community Participation

The EPA provides information regarding the cleanup of the Site to the public through public meetings, the AR file for the Site, and announcements published in the *Mid-Rivers News Magazine*. The EPA encourages the public to gain a more comprehensive understanding of the Site and the Superfund activities conducted there.

The RI Report, FS Report, Proposed Plan, and Community Involvement Plan for OU4 were made available to the public as they were completed, beginning in January 2018. The documents can be found in the AR file online at www.epa.gov/superfund/findetccorp. This information is also maintained at the EPA Region 7 office at 11201 Renner Boulevard in Lenexa, Kansas. The notice of the availability of the documents was published in the *Mid-Rivers News Magazine* on February 2, 2021. A public comment period was held from February 2, 2021 through March 1, 2021. In addition, a public meeting was held on February 9, 2021, to present the Proposed Plan to a broader community audience than those that had already been involved at the Site. At this meeting, representatives from the EPA and MoDNR were available to answer questions about, and accept comments on, the proposed remedy. Comments received

during the public meeting and comment period have been addressed in the Responsiveness Summary of this ROD (Appendix C).

11.0 Scope and Role of the Response Actions

Under CERCLA Section 121, 42 U.S.C. § 9621, and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), are cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In general, the goals for the remedial action are to prevent current and future exposure to contaminated groundwater, prevent further migration of contaminated groundwater, prevent future exposure to groundwater COCs via the vapor intrusion pathway, and return groundwater to beneficial use (i.e., drinking water) within a reasonable timeframe.

The Site is divided into four OUs (Appendix A, Figure 1):

- OU1 addresses the soil and groundwater contamination on the Findett property;
- OU2 addresses the soil contamination on the former Cadmus property;
- OU3 addresses affected groundwater that has migrated off the OU1/OU2 property boundaries; and
- OU4, the subject of this ROD, addresses source material and groundwater at the Substation.

The current status of OU1, OU2 and OU3 is discussed above in Section 9, Site History and Enforcement Activities. OU4 is the last of four operable units at the Site to be addressed through the remedial process. The proposed remedial action at OU4 will prevent current and future exposure to contaminated groundwater beneath the Substation. The exposure will be controlled through a combination of treatment and monitoring of contaminated groundwater and institutional controls.

12.0 Site Characteristics

This section of the ROD describes characteristics of the Site, including an overview of the Site, sampling strategy for the Site, contaminant source areas, extent of contaminants, and site hydrogeology. Detailed information about the Site's characteristics and sampling strategies can be found in documents in the AR, specifically the *Final RI Report, Findett OU4* (May 1, 2019).

12.1 Overview of Site

OU4 is an active electrical substation owned and operated by Ameren. Land in the vicinity of the Substation is industrial, commercial, recreational, and residential. Fountain Lakes Park abuts the Substation to the north, east, and south. The park includes walking trails, a skateboard park, and several lakes or ponds used for fishing. Highway 370 runs along the north side of the park. A residential development is located southeast of the park. An industrial area is located across Highway 370 and Huster Road to the west of the Substation. Agricultural land is located south of the park, and south and north of the industrial area. North and west of Highway 370 is continued agricultural land and additional industrial-commercial property.

12.2 Sampling Strategy for Site

On December 28, 2012, the EPA and Ameren entered into a Settlement Agreement and Administrative Order on Consent to:

- Perform soil and groundwater sampling at the Substation to determine to what extent the Substation property is a source of contamination contributing to the existing OU3 groundwater plume;
- Contain and treat contaminated groundwater migrating off the Substation property; and
- Evaluate future remedial and removal actions.

Based upon the results of the investigations, Ameren implemented a series of pilot studies that evaluated several soil and groundwater treatment options and installed a GETS along the northern border of the Substation property.

Pilot Study #1

In March 2014, the initial pilot study was conducted inside the Substation to evaluate the potential performance of three different in-situ remediation technologies in limited areas near electrical equipment at the Substation: zero valent iron (ZVI), potassium permanganate, and bioaugmentation. Within five months following the injection of potassium permanganate into three groundwater wells and at different soil depths near the Substation's Transformer 2 and its sump, PCE and trichloroethylene (TCE) concentrations in shallow groundwater decreased between 50-96%.

Decreases in PCE and TCE concentrations in groundwater were also observed following the injection of enhanced carbon ZVI into areas of elevated soil concentrations. Also, as a result of the biomass injection in groundwater downgradient of Transformer 2, significant reductions in contaminant concentration levels were observed, with PCE and TCE levels below detection limits, *cis*-1,2-DCE below its MCL, and VC slightly above its MCL.

Pilot Study #2

To evaluate and address impacted groundwater located north of the Substation (referred to as the Northern Plume), Ameren conducted a second pilot study in November 2014 and April 2015. The second pilot study included an injection of enhanced ZVI in groundwater north of City Well 5 and south of Highway 370, sodium persulfate injections in groundwater wells near City Well 5, and injection of sodium permanganate into the clay soil layer inside the Substation in areas with the highest COC concentrations near Transformer 2.

Within one year of the installation of ZVI permeable barriers, groundwater samples at monitoring well PZ-10 (the remaining monitoring well downgradient of the ZVI permeable barriers on the south side of Highway 370) were below the MCLs for all COCs. In addition, as of December 2015, sampling data from monitoring well PZ-2 (north of Highway 370) was below the MCLs for *cis*-1,2-DCE and VC, except for two quarters where VC was slightly above the MCL (2.1 and 4.2 micrograms per liter (µg/L), compared to the MCL of 2 µg/L). Currently, the concentrations of all COCs are below their respective MCLs in monitoring well PZ-2.

Following the injection of sodium persulfate around City Well 5, COC concentrations were reduced to below MCLs within eight months. There has been no rebound in concentration levels, and sampling data

from monitoring wells near City Well 5 continue to be below the MCLs, with the majority of sampling data in this area below detection limits for COCs.

In the second pilot study, sodium permanganate was applied to soil near Transformer 2 and in other areas to aggressively oxidize and significantly reduce COC concentrations and to limit the potential for further leaching into groundwater.

Pilot Study #3

In October 2016, Ameren conducted a third pilot study focused on the areas of maximum concentrations of COCs near Transformer 2 and along the center of the Substation. This pilot study expanded the biomass size injected into groundwater during the original pilot study to include groundwater below Transformer 2, the center of the Substation, and areas north of the electrical distribution equipment.

Within seven months following the augmentation injections, sampling data showed no detections of COCs in monitoring wells MW-10, MW-11, and MW-12, which are immediately downgradient of the wells that exhibited the highest concentrations of COCs (i.e., MW-8 and MW-13). In addition, concentrations of *cis*-1,2-DCE were reduced by 33% at MW-8 and 40% at MW-13. The VC concentrations at these locations have increased slightly, which is a positive indication of reductive de-chlorination.

Pilot Study #4

Based upon the results from prior studies, in August 2018, Ameren performed a fourth pilot study to address concentrations of COCs in the groundwater surrounding MW-8, MW-9, MW-13, and MW-14, as well as the residual COC concentrations in soils surrounding these monitoring wells and Transformer 2 (see Attachment C, Figures 3-6).

Bioaugmentation agents were injected into MW-8 and MW-13 to enhance reductive de-chlorination and to feed the existing biomass near MW-11 and MW-12. Additional bioaugmentation agents were also injected in MW-9 and MW-14, as well as wells IP-42, IP-45, and IP-46, because the previous quarter's data showed increasing COC concentrations, which may be indicative of continued mass flux of contaminants from soil to groundwater.

In 2012, the highest soil concentrations were PCE at 159,000 micrograms per kilogram ($\mu\text{g/kg}$), TCE at 14,700 $\mu\text{g/kg}$, *cis*-1,2-DCE at 11,400 $\mu\text{g/kg}$, and VC at 280 $\mu\text{g/kg}$. Soil samples were then collected prior to the injection of sodium permanganate into the soils in 2018. Soil concentrations prior to the targeted injections were PCE at 94 $\mu\text{g/kg}$ (estimated), TCE at 28 $\mu\text{g/kg}$ (estimated), *cis*-1,2-DCE at 3,860 $\mu\text{g/kg}$, and VC at 1,170 $\mu\text{g/kg}$. During the fourth pilot study, the higher concentration areas were targeted with additional injections of sodium permanganate to further oxidize the COCs; however, the amount injected was limited due to surfacing of oxidants after reaching maximum injection loading.

12.3 Contaminant Source Areas

Chlorinated solvents were historically used at the Substation for degreasing, metal cleaning, and removal and cleanup of transformer oils. VOCs, primarily consisting of PCE, TCE, *cis*-1,2-DCE, and VC have been detected in soil and groundwater at the Substation. In addition, chlorinated VOCs, primarily *cis*-1,2-DCE and VC, have been detected in groundwater to the north of the Substation. In

June 2010, VOCs that were potentially site-related were detected in City Well 5, which is located approximately 180-200 feet north of the Substation.

The source of PCE contamination and its degradation products at OU4 is Ameren's historic use of the product Mozel, which contained 18% PCE. It was used to clean oily surfaces prior to maintenance of Substation equipment. The initial investigation of OU4 identified the presence of VOCs on-site near electrical equipment, in both the soil and groundwater, with the highest concentrations being near Transformer 2.

12.4 Extent of Contaminants

Pre-Pilot Studies

During the initial investigation of OU4, a total of 44 soil borings were taken. The soil was logged consistently as silty clay to a depth of 34 feet, where it transitioned to a fine to medium-grained alluvial sand. All borings remained in this sand unit to depths up to 104 feet. During the 2012 investigation of OU4, PCE, TCE, *cis*-1,2-DCE, and VC were detected in soil at concentrations as high as 159,000 µg/kg, 14,200 µg/kg, 9,540 µg/kg, and 229 µg/kg, respectively.

During that same period, a total of 44 groundwater samples were profiled to various depths. Groundwater profiling was performed from a depth of 33-37 feet below ground surface (bgs) to a depth of 103-107 feet bgs (the bedrock surface at the bottom of the alluvium). Samples were obtained at 10-foot intervals. Groundwater concentrations of *cis*-1,2-DCE were as high as 93,000 µg/L. There was no indication of dense non-aqueous phase liquid at OU4.

Additional investigations further delineated the extent of VOCs in groundwater at OU4. Based on those investigations, the depth of groundwater contamination above the Safe Drinking Water Act MCLs was limited to a depth of 45 feet bgs, except at one location where the MCL for PCE, 5 µg/L, was exceeded at depths of 53-87 feet bgs.

Post-Pilot Studies

Soil – Soil concentrations of target compounds were reduced following the application of treatment technologies used during the various pilot studies. Post-treatment soil sampling data reflects a decrease in concentrations following the injection of both potassium and sodium permanganates into the silty clays.

Although the concentrations of PCE and TCE detected in pre-remedial Substation soil (2-10 feet bgs and 10-23 feet bgs) exceeded the EPA's industrial soil RSLs, no compounds exceeded the industrial soil RSLs in Substation soil samples collected post-pilot studies. Additionally, at 2-10 feet bgs, which is the depth of soil most likely to be contacted by future human receptors, none of the post-pilot study concentrations exceeded residential soil RSLs, which are protective for all types of human receptors. Although the concentrations of VC detected in a few deeper (> 20 feet bgs) post-pilot Substation soil samples exceed the EPA's residential soil RSL, none of the samples exceed a non-cancer hazard quotient of 1 (hazard quotient less than 1 means that toxic noncarcinogenic effects from that chemical are unlikely) or excess cancer risk of 1×10^{-4} (lifetime excess cancer risk of one in 10,000), which are the levels of risk that, when exceeded, warrant action under the NCP. Thus, none of the concentrations detected in any depth of soil after completion of the pilot studies poses unacceptable human health risks under a residential exposure scenario, so there are no COCs for OU4 soil.

Groundwater – The operation of the GETS has been effective in keeping COCs at OU4 from migrating into the former groundwater plume area north of OU4. In addition, the on-site pilot studies have been effective in reducing the COC concentrations in the groundwater in a short period of time.

The successive treatments applied during the pilot studies have resulted in significant reductions of groundwater contamination and the ongoing reductive de-chlorination of COCs. Current COCs in groundwater are 1,1-dichloroethylene, acetone, *cis*-1,2-DCE, PCE, toluene, *trans*-1,2-dichloroethylene (*trans*-1,2-DCE), TCE, and VC. Of the 17 monitoring wells on site, one well is slightly above the MCL for TCE; two wells exceed the MCL for *cis*-1,2-DCE (7,300 µg/L and 12,000 µg/L); and eight monitoring wells exceed the MCL for VC (3.4 µg/L to 1,900 µg/L). The current area with COC concentrations in groundwater above MCLs is limited to a small area surrounding Transformer 2. This is an improvement from pre-remedial concentration levels when only two monitoring wells were below the MCLs for all COCs.

12.5 Site Hydrogeology

Site geology consists of approximately 107 feet of unconsolidated alluvial sediments in the Mississippi River valley overlying consolidated limestone bedrock known as Mississippian-age St. Louis limestone. The Mississippi River alluvium is a high-yield aquifer that supplies water to the Elm Point Wellfield. The underlying St. Louis limestone is a massive gray fossiliferous limestone up to 100 feet thick. The unconsolidated materials above the limestone are a part of the flood plain of the Mississippi River, located approximately 2.8 miles north of the Site. The top 30-34 feet of the unconsolidated materials consist of clay with some silt, with silt content increasing in the last 10 feet above a sudden transition to silty fine-to-medium grained sand. The sand persists to the top of bedrock. Within the Substation there is approximately 2-3 feet of gravel fill placed on top of the clay. Beneath the three main transformers are pits approximately 6 feet deep that have been backfilled with coarse (3-5 inch) rock.

Ameren installed 17 monitoring wells at OU4 with 12 finished to depths of 45 feet within the sands of the alluvial aquifer; two are screened at a 1-foot interface between the clay and sands of the aquifer at 31-32 feet; and three are installed into clays surrounding Transformer 2 and at varying depths between 15-30 feet.

Shallow excavations within the Substation typically fill with water that appears to be perched water sitting on top of the native clay soil. As drilling continues deeper, the saturation depth typically appears at around 18 feet bgs in the silty clays. No free water is observed until the sand unit is penetrated at approximately 30 feet bgs. The sand is a semi-confined unit; wells screened in this unit (35-45 feet bgs) have varying static water levels dependent upon season and stage of the Mississippi River. In September 2012, depths to water were between 21 and 23 feet bgs. In April 2013, while the Mississippi River was above flood stage, depths to water in these same wells ranged from 11-12 feet bgs.

Measuring of groundwater elevations at various times indicates a consistent flow direction to the north-northwest with a typical gradient of 0.0007 foot/foot. Aside from regular seasonal fluctuations, significant changes to aquifer chemical conditions that might mobilize contaminants have not been observed nor are they anticipated.

12.6 Conceptual Site Model

A conceptual site model (CSM) describes the sources and potential migration pathways through which constituents may have been transported to other environmental media (receiving media), and the human and environmental receptors that may in turn contact the receiving media. The linkage between a receiving medium and potential exposure is called an exposure pathway. For an exposure pathway to be complete, the following conditions must exist (as defined by EPA (1989)):

- A source and mechanism of chemical release to the environment;
- An environmental transport medium (e.g., air, water, soil);
- A point of potential contact with the receiving medium by a receptor; and
- A receptor exposure route at the contact point (e.g., inhalation, ingestion, dermal contact).

If any of these four components are not present, the pathway is not complete. The components of the CSM for this Site are described below.

Sources

Chlorinated solvents were historically used inside the Substation for degreasing, transformer oil removal, and metal cleaning. VOCs, primarily comprised of PCE, TCE, *cis*-1,2-DCE and VC, have been detected in soil and groundwater at OU4. In addition, chlorinated VOCs, primarily *cis*-1,2-DCE and VC, have been detected in groundwater to the north of the Substation. In June 2010, VOCs that were potentially site-related were detected in City Well 5, which as noted above is located approximately 180-200 feet north of the Substation.

Migration Pathways and Receiving Media

Site investigation data indicate that VOCs in soil inside the Substation migrated vertically through soil to groundwater, dispersed in groundwater, and then migrated with groundwater flow downgradient to the north. Consequently, receiving media include soil and groundwater at the Substation and groundwater downgradient (north) of OU4.

VOC concentrations in Substation soil and in groundwater have substantially decreased following Ameren's pilot studies, which included both enhanced bioaugmentation and chemical oxidant injections in addition to the GETS installation. VOC concentrations in groundwater near City Well 5 (i.e., as measured at locations PZ-5, PZ-7 and PZ-8) have decreased to below MCLs, and as described in the RI Report, no detections of site-related VOCs have been reported in any City Wells since February 2016. The reductions in VOC concentrations that have taken place since the original sampling of the Site are documented in Appendices D and E of the RI Report (PZ database for wells located off-Substation and MW database for wells located on-Substation, respectively). The groundwater data indicate that the area of groundwater impacts is shrinking, as evidenced by fewer wells exhibiting concentrations of VOCs above drinking water standards. Presently, all VOC concentrations in monitoring wells and piezometers north of the Substation are below MCLs.

VOCs can partition from soil to outdoor air, and from soil and groundwater to soil gas. Soil gas containing VOCs can then migrate through interstitial soil pore space, and potentially be drawn into buildings located in close proximity to VOC sources. This migration pathway is referred to as vapor intrusion. Vapor intrusion can result in indoor air being a potential exposure medium for VOCs present in subsurface media. Based on information presented in the RI Report and recent groundwater sampling,

VOCs are not present in groundwater near any occupied buildings. The shortest distance between the leading edge of the plume (PZ-2) and the nearest existing occupied building is approximately 300 feet (building located to the north of Highway 370). Therefore, vapor intrusion of VOCs from groundwater to indoor air is not a current complete exposure pathway. However, VOCs were detected in Substation groundwater at concentrations above vapor intrusion screening levels (VISLs), indicating that the vapor intrusion pathway could be potentially complete if occupied buildings were constructed in that area in the future.

Although groundwater that discharges to surface water can result in migration of constituents to surface water, the Site investigation activities have demonstrated that VOCs are not present in downgradient groundwater at locations near surface water bodies, indicating that surface water is not a receiving medium for this Site.

Exposure Setting and Receptors

OU4 is an active electrical power substation. Due to safety concerns, access to the Substation is only granted to authorized personnel (Ameren employees or their contractors). Access by unauthorized persons does not occur due to fencing and locking gates. The ground within the Substation is covered with crushed stone. The use of the land where the Substation is located, including the entirety of Substation property, is not expected to change in the future. Therefore, potential receptors under current and future conditions include:

- Industrial workers (workers who maintain the Substation: current or future use);
- Construction workers (workers who may perform upgrades or modifications to the Substation that involve subsurface excavation: future use); and
- Future residents (future use of groundwater as drinking water and potential for vapor intrusion).

The surrounding land use is commercial, recreational, residential, and agricultural. However, the area north of the levee that is not on Substation property (i.e., where residual VOCs have been detected in groundwater) is presently open space. Hypothetically, that land could be developed for recreational, commercial, or residential uses. However, installation of private water supply wells in that area is prohibited by local ordinance.

Potential Exposure Pathways

Exposure pathways evaluated in the Human Health Risk Assessment (HHRA) that may potentially be complete are summarized below:

Substation Soil

- Although the ground within the Substation is covered with stone, which prevents direct contact with soil, the HHRA incorporates the assumption that industrial workers who access the Substation could be exposed to surface soil, and construction workers who may perform intrusive subsurface work at the Substation may contact surface and subsurface soil. Exposure to soil is assumed to occur by:
- Dermal contact, which occurs when a substance is absorbed through the skin following adherence of soil on the skin (e.g., when skin surfaces, such as hands, contact the soil);

- Incidental ingestion, which occurs when soil that has adhered to the skin is transferred to the mouth during incidental hand-mouth contact; and
- Inhalation, which can occur if VOCs partition from soil to the outdoor air as vapors or adsorb to particulates that are then released to the outdoor air as dust.

Soil North of the Substation

- Soil north of the Substation is not covered with stone, but there are no ongoing activities that would result in exposure to that soil. Since all soil samples were collected on Substation property, the HHRA incorporates the same exposure pathway assumptions for soil outside of the levee as it does for soil within the Substation.

Substation Groundwater

- Although the Substation will not be used for any purposes other than as a substation, the HHRA incorporates the assumption that groundwater beneath the Substation could be used as a future source of drinking water. Where groundwater is used as a source of drinking water, residents are assumed to potentially be exposed to Contaminants of Potential Concern (COPCs). The drinking water pathway assumes that residents use groundwater as a source of tap water and are exposed via ingestion of drinking water, dermal contact, and inhalation of VOCs that may be released from the water to indoor air during household uses, including bathing. Construction workers could potentially be exposed to COPCs in groundwater via incidental ingestion and dermal contact if shallow groundwater is encountered during excavation activities. However, OU4 groundwater is located at a depth (12 to 23 feet bgs) that is greater than depths that would realistically be encountered during excavation activities, indicating that direct contact with groundwater is not a complete exposure pathway for a construction worker.

Groundwater North of the Substation

- Although groundwater north of the Substation is used as a source of drinking water for the public water supply, no OU4-related constituents have been detected in the City wells since February 2016, and installation of private supply wells in the area north of the levee is prohibited by local ordinance. There are no occupied buildings in that area. Therefore, under current use conditions, there are no complete exposure pathways to groundwater north of the Substation. Furthermore, analytical results for ongoing groundwater monitoring of the area north of the Substation demonstrate that VOCs are below drinking water standards. Evaluation of Substation groundwater as a hypothetical future source of drinking water is expected for all groundwater associated with OU4.

Detailed information on the CSM and further explanation about potential exposure pathways and potential receptors can be found below in Section 14 or in the *Final RI HHRA Report, Findett OU4* (March 2019).

13.0 Current and Potential Future Land and Water Uses

Currently, OU4 is an active electrical power substation with restricted access. Future land use is not expected to change. Potential human receptors include current and future industrial workers who maintain the Substation and future construction workers who may perform upgrades or modifications involving subsurface excavation.

The Site is located in an area comprised primarily of mixed industrial and agricultural uses in the flood plain of the Mississippi River. Commercial development is projected to increase due to the proximity to Highway 370, which acts as an east/west bypass around the City and Interstate 70. Groundwater north of the levee is currently used as a source of drinking water for public water supply. No COCs have been detected in the City wells since February 2016. Installation of private supply wells in the area north of the levee is prohibited by local ordinance. There are no occupied structures inside the Substation and currently no structures in close proximity to groundwater where COCs have been detected.

Groundwater in the area is utilized by the City as a drinking water source and by others for industrial, commercial, agricultural (livestock and irrigation) and domestic uses. Groundwater in the area is considered potable. Missouri considers drinking water to be the highest beneficial use of groundwater due to the reliance on groundwater for public and private water supplies.

14.0 Summary of Site Risks

CERCLA requires the EPA to seek permanent solutions to protect human health and the environment from hazardous substances. These solutions provide for removal, treatment, or containment of hazardous substances and pollutants and contaminants so any remaining contamination does not pose an unacceptable risk to human receptors, ecological receptors, or the environment.

In 2019, a HHRA was prepared to provide an evaluation of the potential threat to human health and the environment in the absence of any remedial action. A Screening Level Ecological Risk Assessment (SLERA) was conducted at OU4. It concluded that the ecological risks at OU4 were low. The risk assessments provide the basis for determining whether remedial action is necessary and the justification for performing remedial actions. The risk assessments support the evaluation of the remedial alternatives for OU4 and support the recommended remedy leading to the final ROD.

14.1 Summary of Human Health Risk Assessment

The HHRA estimates what risks the Site poses if no action is taken. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the HHRA for this Site. The HHRA evaluates the potential risks to human health and the environment due to releases of chemicals at OU4. The main objective of this HHRA is to provide the information necessary to assist in the decision-making process. The specific objectives of the HHRA are to:

- Identify and provide analysis of baseline risks (defined as risks that might exist if no remediation or institutional controls were applied at the Site) and help determine what action is needed at the Site;
- Provide a basis for determining the levels of chemicals that can remain on site and still not adversely impact public health and the environment; and
- Provide a basis for comparing potential health and environmental impacts of various remedial alternatives.

The HHRA results are used to document the magnitude of potential risk at OU4 and the associated cause(s) of that risk. The results also help determine what, if any, remedial response actions may be necessary and assist in establishing the cleanup goals.

14.1.1 Identification of Chemicals of Potential Concern

In a HHRA, all contaminants detected in environmental media (i.e., groundwater, soil, air, etc.) are first compared to risk-based screening levels. Any contaminants that exceed the risk-based screening levels are considered COPCs and are carried through the risk assessment. The HHRA identified PCE; TCE; 1,1-DCE; *cis*-1,2-DCE; *trans*-1,2-DCE; VC; acetone; and toluene as COPCs in groundwater at the Substation, using the EPA's tapwater RSLs for comparison (Appendix A, Table 12). Of these, PCE; TCE; *cis*-1,2-DCE; and VC were also identified as COPCs in groundwater north of the levee (Appendix A, Table 13). For soil, PCE and TCE were identified as COPCs in pre-pilot studies data, using the EPA's industrial soil RSLs, which are protective of industrial workers (Appendix A, Tables 3 and 4). VC was the sole COPC identified in post-pilot studies data in comparison with the EPA's residential soil RSLs, which are protective for all types of human receptors, including adult and child residents (Appendix A, Table 11).

14.1.2 Exposure Assessment

The exposure assessment identified the current and future populations of humans that use or access the Substation and area north of the levee, the mechanisms or exposure pathways by which those humans may be potentially exposed to COPCs, and the magnitude of exposure that may occur through the potential exposure pathways.

Soil

Using industrial soil RSLs, while PCE and TCE were identified as COPCs in pre-pilot study Substation soil (2-10 feet bgs and 10-23 feet bgs), no COPCs were identified in post-pilot study Substation soil (2-10 feet bgs and 10-23 feet bgs). This indicates that, based on the post-pilot study (current) conditions, residual VOC concentrations in OU4 soils are below concentrations that would pose a de minimis risk for continued industrial use of OU4 (Appendix A, Tables 2, 3, 4, 8, and 9).

Using residential soil RSLs, which are lower and protective of all potential human receptors, no COPCs were identified in post-remedial Substation soil (2-10 feet bgs). VC was identified as a COPC in post-remedial Substation soil (10-23 feet bgs) due to one exceedance of the residential soil RSLs at a depth of 20.5 feet bgs, and the HHRA documented additional exceedances at 25 feet bgs. The HHRA assumes that there are no complete exposure pathways to soil greater than 10 feet bgs. However, in the unlikely event that subsurface soil at 20 to 25 feet bgs were brought to the surface, the samples with residential soil RSL exceedances were further examined. As previously mentioned in Section 12.4, none of these samples pose a non-cancer hazard quotient greater than 1 or an excess cancer risk greater than 1×10^{-4} , which are the levels of risk that, when exceeded, warrant action under the NCP. Therefore, no quantitative evaluation of risks for potential exposures to Substation soil was required in the HHRA (Appendix A, Tables 10 and 11).

No COPCs were identified in pre-remedial soil north of the Substation (0-2 feet bgs, 2-10 feet bgs, or 10-23 feet bgs). Therefore, no quantitative evaluation of risks for potential exposures to soil north of the Substation was required in the HHRA (Appendix A, Tables 5, 6, and 7).

Groundwater

Using tapwater RSLs, COPCs were identified for groundwater under the Substation and north of the levee (Attachment A, Tables 12 and 13). However, there are no current complete exposure pathways associated with potable use of groundwater. Specifically:

- Substation groundwater is not used as a source of potable water and will not be used as such in the foreseeable future;
- Substation groundwater is not a potential source of VOCs to municipal water because the groundwater containment system and bioaugmentation mass injected has controlled potential migration of VOCs to the north of the Substation;
- No VOCs have been detected in a City municipal well since February 2016;
- Although COPCs were identified in groundwater north of the levee based on detected concentrations above tapwater RSLs, VOC concentrations in groundwater north of the Substation are all currently below the MCLs, indicating that the Site is not currently a contaminant source for City Well 5 water. Furthermore, the ZVI permeable barrier controls further potential migration of VOCs north of City Well 5; and
- Even if VOCs were detected in groundwater north of the levee at concentrations above the MCL, and groundwater entered a municipal well at concentrations above the MCL, the water from multiple City wells is blended before being distributed. The blending, as well as various drinking water treatment processes, would significantly reduce or eliminate VOCs in municipal drinking water.

Nonetheless, in accordance with EPA guidance for baseline risk assessments (EPA, 1989), the HHRA incorporates the assumption that groundwater within the VOC plume could be used as a source of drinking water in the future. Therefore, the Substation groundwater dataset evaluated in the HHRA represents data from the core of the groundwater plume and is used as a conservative estimate of potential future exposure. There are three exposure routes by which humans can be exposed to COPCs in groundwater: ingestion, dermal contact, and inhalation of VOCs that may be released from groundwater to indoor air during household uses of the water. Potentially complete exposure pathways for future receptors at OU4 are presented below and in Attachment A, Table 14:

Receptor Type	Exposure Point	Exposure Pathway
Future Resident	Core of Plume (within Substation)	Ingestion as Drinking Water Dermal Contact Inhalation of VOCs

Vapor intrusion is an incomplete pathway for current land use conditions. There are no occupied structures at the Substation, and it is not anticipated that occupied structures will be built at the Substation in the future. There are currently no structures in close proximity to groundwater where VOCs have been detected. The nearest occupiable building to the downgradient edge of the plume (PZ-2) is approximately 300 feet away, on the north side of Highway 370. Therefore, the vapor intrusion exposure pathway is incomplete under current use conditions.

To evaluate the potential for vapor intrusion to be a complete pathway if occupied buildings are constructed in the future, the maximum concentrations of VOCs that were detected in Substation groundwater were compared to EPA residential VISLs for shallow groundwater. VISLs were calculated using the November 2018 EPA VISL Calculator, (EPA, 2018c), and assuming a target excess cancer risk of 1×10^{-5} (lifetime excess cancer risk of one in 100,000), a target non-cancer hazard quotient of 1,

and a groundwater temperature of 17°C. PCE, TCE, and VC were detected at concentrations in substation groundwater above the VISLs, indicating that the vapor intrusion pathway could potentially be complete if buildings were constructed over the core of the plume in the future.

No VOCs were detected in groundwater north of the Substation at concentrations above VISLs. However, the maximum reporting limit for non-detects for VC of 2 µg/L is slightly above the VISL of 1.78 µg/L. VC was detected in only two of fourteen groundwater samples in the data set for groundwater north of the Substation, at concentrations of 0.1 µg/L and 0.6 µg/L. This suggests that, although the reporting limit for VC is above the VISL, VC is unlikely to be present in groundwater north of the Substation at concentrations above the VISL. Therefore, the vapor intrusion pathway is unlikely to be complete if occupied buildings were constructed over that portion of the plume.

Direct contact with groundwater is an incomplete exposure pathway for all receptors. Of the receptors identified at OU4, only construction workers are anticipated to do subsurface work. However, it is anticipated that future construction would not likely extend deeper than 10 feet bgs. Groundwater depths measured during Site investigation activities range from 12 feet bgs to 23 feet bgs. Consequently, groundwater is not expected to be encountered during construction activities.

14.1.3 Toxicity Assessment

The toxicity assessment identifies the types of potential adverse health effects (such as cancer or birth defects) associated with exposure to a contaminant and the relationship between adverse health effects and the exposure level. When performing risk assessments, EPA evaluates carcinogenic and noncarcinogenic effects of various chemicals present at a site. Carcinogenic and noncarcinogenic health effects are evaluated independently due to the different toxicological endpoints, relevant exposure duration, and methods used to characterize risk.

Toxicity values were obtained from the following hierarchy of sources in accordance with the EPA Office of Superfund Remediation and Technology Innovation (EPA, 2003):

- Tier 1 – Integrated Risk Information System (IRIS) (EPA, 2018)
- Tier 2 – Provisional Peer-Reviewed Toxicity Values
- Tier 3 – Other (Peer-Reviewed) Values, including Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs) (ATSDR, 2017)

Carcinogenic and noncancer toxicity information that is relevant to the COCs is provided in Appendix A, Tables 15-17.

14.1.4 Risk Characterization

For carcinogens, risks are generally expressed as the incremental probability of an individual's developing cancer over a lifetime as a result of exposure to the carcinogen. Excess lifetime cancer risk (ELCR) is calculated from the following equation:

$$\text{Risk} = \text{CDI} \times \text{SF}$$

where: risk = a unitless probability (e.g., 2×10^{-5}) of an individual developing cancer
CDI = chronic daily intake averaged over 70 years (mg/kg-day or µg/m³)
SF = slope factor, expressed as (mg/kg-day)⁻¹ or (µg/m³)⁻¹

An excess lifetime cancer risk of 1×10^{-6} indicates that an individual has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an “excess lifetime cancer risk” because it is in addition to the risks of cancer that individuals face from other causes such as smoking or exposure to too much sun. Under the NCP, the EPA’s generally acceptable risk range for site-related exposures is 1×10^{-6} to 1×10^{-4} .

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., lifetime) with an oral or dermal reference dose (RfD) or an inhalation reference concentration (RfC) derived for a similar exposure period. An RfD or RfC represents a level that an individual may be exposed to that is not expected to cause any deleterious effect. The ratio of exposure to toxicity is called a hazard quotient (HQ). A HQ less than 1 indicates that a receptor’s dose of a single contaminant is less than the RfD or RfC, and that toxic noncarcinogenic effects from that chemical are unlikely. The Hazard Index (HI) is generated by adding the HQs for all COPCs that affect the same target organ (e.g., liver) or that act through the same mechanism of action within a medium or across all media to which a given individual may reasonably be exposed. A HI less than 1 indicates that, based on the sum of all HQs from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are unlikely. A HI greater than 1 indicates that site-related exposures may present a risk to human health.

The 2019 HHRA quantified estimates of potential health risks to a future residential (adult and child) receptors exposed to Substation groundwater via ingestion, dermal contact, and inhalation of VOCs, based on data collected from the core of the groundwater plume (Appendix A, Table 18). Potential future resident (adult and child) exposure to Substation groundwater is associated with an ELCR of 2×10^{-1} . The cancer risks are above the NCP risk range of 10^{-6} to 10^{-4} . The cumulative HI is 950, which is above the target HI of 1. COPCs in OU4 groundwater have RfD and RfC values that are based on effects on different target organs, as shown in Table 18. The HIs for Substation groundwater based on target organ are also above 1, due to the HQs associated with *trans*-1,2-DCE, *cis*-1,2-DCE, PCE, TCE, and VC.

The maximum detected COPC concentrations within the core of the groundwater plume were between one and four orders of magnitude higher than VISLs (Appendix A, Table 12). This indicates that if construction of an occupied building was to occur over the core of the groundwater plume, vapor intrusion exposures could be associated with risks above the NCP acceptable risk levels and that further assessment of the vapor intrusion pathway would be required.

14.1.5 Uncertainties

Conducting a risk assessment requires making numerous assumptions, which introduces uncertainty in the risk and hazard estimates. The main uncertainties in the HHRA are associated with data quality, exposure estimation, and toxicological data. There is considerable uncertainty in the HHRA associated with the acute and chronic non-cancer hazard estimates based on non-detected results. A detailed discussion of the uncertainties for each step of the HHRA process is provided in the HHRA Addendum.

Based on the information provided in the RI Report, the groundwater data indicate that VOC concentrations in groundwater outside the core of the plume are decreasing (downward trends). Within the core of the plume, concentrations of PCE and TCE are decreasing, while concentrations of degradation products (*cis*-1,2-DCE and VC) are decreasing in some wells and variable in other wells as the plume continues to degrade. The area of groundwater impacts is shrinking, as evidenced by fewer

wells exhibiting concentrations of VOCs above drinking water standards. Therefore, while the groundwater data used in the HHRA is representative of the time period over which it was collected, information provided in the RI Report suggests that the level of contaminants in groundwater will continue to decrease in the future.

14.2 Ecological Risk Assessment

A SLERA was conducted at OU4. It concluded that the ecological risks at OU4 were low. Specifically, the SLERA stated that potential adverse risks to aquatic or terrestrial receptors exposed to contaminants at OU4 are unlikely and that contaminated groundwater from OU4 does not appear to be negatively impacting ecological receptors.

The information presented in the SLERA is sufficient to support the RI/FS and the development of a final remedy. No further data are required to assess ecological risks.

14.3 Basis for Action

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Using Reasonable Maximum Exposure assumptions, potential risks of cancer and non-cancer health effects to future receptors exceeded thresholds of concern, due to contamination in groundwater.

In the unlikely event OU4 is redeveloped for residential purposes in the future, residents at or near OU4 could be exposed to contaminants in groundwater via ingestion and dermal contact, if wells are installed that draw on the contaminated portion of the aquifer for tapwater. Future residents or industrial workers could also be exposed to hazardous air contaminants via vapor intrusion if homes or office buildings are allowed to be built on top of the contaminant plume. Industrial workers could also be exposed to contaminants at OU4 in the future, if wells are installed that draw on the contaminated portion of the aquifer for tap water.

Current contaminant levels indicate potential health risks from future exposure to contaminated groundwater at OU4 warrant remedial action. Groundwater COCs that primarily contributed to these risks of cancer and non-cancer health effects include PCE, TCE, *cis*-1,2-DCE, *trans*-1,2-DCE, 1,1-DCE, and VC.

15.0 Remedial Action Objectives

CERCLA, as amended by Section 121(b) of the Superfund Amendments and Reauthorization Act, requires selection of remedial actions to attain a degree of cleanup that ensures protection of human health and the environment, are cost effective, and use permanent solutions and alternative treatment technologies or resource technologies. To satisfy CERCLA requirements, RAOs were developed for the OU4 remedy. The RAOs were used to develop the remedial alternatives for OU4.

The RAOs developed for OU4 are:

- Prevent exposure to the COCs above their MCLs in groundwater;
- Prevent potential future risks to human receptors from inhalation of groundwater COCs via the vapor intrusion pathway;

- Prevent future migration of groundwater contamination off site; and
- Restore groundwater to beneficial use (i.e., at or below MCLs) within a reasonable timeframe.

The Selected Remedy will ensure that current and future receptors are not exposed to contaminated groundwater in the drinking water aquifer or indoor air and will restore the aquifer to beneficial use in a reasonable timeframe. The cleanup levels for the Selected Remedy are the MCLs for the OU4 COCs. Achieving the MCLs provides endpoint concentrations for each exposure route and provides protection for all potential current and future receptors.

The Selected Remedy complies with applicable or relevant and appropriate requirements (ARARs) and Safe Drinking Water Act standards.

Actions performed under the 2012 AOC, the 2018 ASAO, or voluntarily by Ameren have resulted in attaining the RAOs for groundwater north of the Substation and have made significant progress towards those goals within the Substation. The RAO for soil has been achieved as described in the previous section.

16.0 Description of Remedial Alternatives

A summary of remedial alternatives to address risks to human health and the environment and to achieve remediation goals are as follows:

1. No Action;
2. In-Situ Chemical Oxidation (ISCO), Enhanced Bioaugmentation Attenuation (Enhanced Bio), GETS, and Institutional Controls (ICs); and
3. Enhanced Bio, GETS, and ICs.

The EPA has selected Alternative 3 for the reasons discussed below.

16.1 Alternative 1 – No Action

The "no action" alternative provides a baseline reference to evaluate other alternatives. A no further action approach maintains OU4 in its current condition without additional measures to control exposures.

This alternative includes leaving OU4 as is, with no additional response actions performed. While a no action alternative is applicable to areas of OU4 where MCLs are not exceeded, it is the application of this alternative to the groundwater beneath a limited area of the Site that is evaluated here.

The City relies on groundwater for its water supply needs and OU4 is located within the City's well field. Accordingly, this alternative is not effective in providing protection to human health and the environment and will not reduce the toxicity, mobility, or volume of the COCs. This alternative would not meet the RAOs.

Capital Cost	\$0
Annual Operation & Maintenance (O&M)	\$0
Present Worth Cost	\$0
Time to Meet RAOs	> 30 years

16.2 Alternative 2 – ISCO, Enhanced Bio, GETS, and ICs

ISCO involves the injection of at least one oxidant to chemically break down the COCs to produce non-toxic end products. As part of the pilot test studies, Ameren considered a variety of oxidant products. Both potassium and sodium permanganate were evaluated.

Ameren conducted three pilot studies to assess the effectiveness of chemical oxidation. While such measures proved effective, care must be taken so the chemical reactions are exercised to completion so as not to produce toxic end products, such as VC. In fact, according to the HHRA, the soil has reached both industrial and residential RSLs and no additional measures are necessary to mitigate health risks associated with potential exposures to Substation soil. The pilot studies have shown that chemical oxidation using permanganates (sodium or potassium) has been successful in the reduction of the COCs in the clay soils at OU4. The remaining low concentrations in groundwater north of the Substation are below levels that would likely benefit from additional ISCO injections.

Enhanced bioaugmentation is defined as the use of *Dehalococcoides* (an anerobic bacteria capable of reductive dechlorination) to enhance existing natural attenuation processes in groundwater. This alternative consists of a carefully controlled and monitored site cleanup approach that will reduce contaminant concentrations in groundwater to levels that are protective of human health and the environment within a reasonable timeframe. Enhanced bioaugmentation includes the physical, chemical, and biological processes that reduce the mass, toxicity, mobility, volume, or concentration of contaminants. This requires extensive monitoring, data evaluation and risk assessment considerations.

Enhanced bioaugmentation techniques were evaluated in the first, third, and fourth pilot studies, which targeted the contaminants present in groundwater within the sand unit at OU4. A combined injection of an extended life organic substrate (bioaugmentation to promote bacterial growth) combined with *Dehalococcoides* was tested to stimulate biodegradation in the sand unit.

The enhanced bio performed well because the sand unit at OU4 is conducive to a broader and more consistent spread of injectants. In fact, during multiple pilot studies, Ameren enhanced the naturally-occurring processes by adding naturally occurring *Dehalococcoides* in the areas of highest groundwater impact. Resulting reductions in groundwater contaminant concentrations are being tracked using quarterly sampling of monitoring wells in and adjacent to the impacted groundwater area. The COC concentrations have been greatly reduced and the majority of monitoring wells are now below the MCLs for all COCs.

In 2014 a GETS was installed at the north end of the Substation property and inside the flood berm. The GETS is comprised of three extraction wells with one inside and two outside the bermed area, and an air stripper housed in an aboveground structure inside the Substation. Groundwater from the extraction wells is pumped through the air stripper to remove VOCs prior to surface discharge.

The three extraction wells are screened at 35-45 feet bgs and can operate at a combined rate of approximately 62 gallons/minute. The current groundwater extraction rate is 16 gallons/minute. Groundwater flow moves through the shallow aquifer at a hydraulic conductivity rate of approximately 30 feet per day. When the GETS is operating, the capture zone appears to be adequate to contain remaining contaminated groundwater within the Substation.

This alternative has already been implemented during pilot studies at the Site and has reduced the size of the groundwater plume to a small area within the Substation. All groundwater north of the Substation is

below MCLs for all site COCs. Biomass has been injected downgradient from Transformer 2, creating an attenuation zone that reduces COCs as groundwater passes through the zone. The GETS should be placed in standby mode because the biomass has spread and is being collected on filter screens within the GETS. Continued water extraction could dissipate the biomass, thereby undermining ongoing groundwater treatment. The GETS would remain at OU4 but be placed in standby mode. Ongoing monitoring can be focused on biomass application areas to confirm ongoing degradation and evaluate potential for augmentation if necessary. Under this alternative, the GETS would be restarted under the circumstances described below. Periodic inspection and maintenance of the GETS may be necessary to keep the system operational.

Engineering controls such as site or area berms and fencing are included with this alternative and help control exposure pathways. To ensure that public access to OU4 remains restricted, security measures have been taken at OU4 to include fencing, locked gates, restricted access to approved personnel, digging restrictions, and soil management and disposal practices.

ICs in the form of an environmental covenant, or other equivalent proprietary control, will be executed and filed with the Recorder of Deeds prohibiting the installation of potable water wells and construction of buildings within the Substation without prior notification to and approval by the EPA and the state.

Under this alternative, the GETS will initially be placed in standby status. However, if the MCL is exceeded for one event for any COC outside of the Substation or there is an increasing Mann-Kendall³ trend inside the Substation for four consecutive quarters, a remedial action of restarting the GETS, ISCO or enhanced bio, or a combination of the three will be implemented. The GETS and/or enhanced bioaugmentation would continue to be implemented until the groundwater COCs show a declining Mann-Kendall trend for four consecutive quarters.

Cost per Application	\$35,000 Bio \$75,000 ISCO
GETS Annual O&M	\$130,000
Annual Groundwater Monitoring	\$100,000
Annual Present Worth Cost	\$340,000
Time to Meet RAOs	< 10 years

16.3 Alternative 3 – Enhanced Bio, GETS, and ICs

This alternative is the same as Alternative 2, except that it does not include ISCO injections. This alternative has already been implemented during pilot studies and has reduced the size of the groundwater plume to a small area within the Substation. All groundwater north of the Substation is below MCLs for all site COCs. Biomass has been injected downgradient from Transformer 2, creating an attenuation zone that reduces COCs as groundwater passes through the zone. The GETS should be placed in standby mode because the biomass has spread and is being collected on filter screens within the GETS. Continued water extraction could dissipate the biomass, thereby undermining ongoing groundwater treatment. The GETS would remain at OU4 but be placed in standby mode. Ongoing monitoring can be focused on biomass application areas to confirm ongoing degradation and evaluate potential for augmentation if necessary. Under this alternative, the GETS would be restarted under the circumstances described below. Periodic inspection and maintenance of the GETS may be necessary to keep the system operational.

³ The Mann-Kendall Trend Test is used to analyze data collected over time for consistently increasing or decreasing trends.

Engineering controls such as site or area berms and fencing are included with this alternative and help control exposure pathways. To ensure that public access to OU4 remains restricted, security measures have been taken at OU4 to include fencing, locked gates, restricted access to approved personnel, digging restrictions, and soil management and disposal practices.

ICs in the form of an environmental covenant, or other equivalent proprietary control, will be executed and filed with the Recorder of Deeds prohibiting the installation of potable water wells and construction of buildings within the Substation without prior notification to and approval by the EPA and the state.

Under this alternative, the GETS will initially be placed in stand-by status. However, if the MCL is exceeded for one event for any COC outside of the substation or there is an increasing Mann-Kendall trend inside the Substation for four consecutive quarters, a remedial action of restarting the GETS, or enhanced bio, or a combination of the two will be implemented. The GETS and/or enhanced bio would continue to be implemented until the groundwater COCs show a declining Mann-Kendall trend for four consecutive quarters.

Bio per Application	\$35,000
GETS Annual O&M Cost	\$130,000
Annual Groundwater Monitoring	\$100,000
Annual Present Worth Cost	\$265,000
Time to Meet RAOs	< 10 years

17.0 Summary of Comparative Analysis of Alternatives

The NCP provides that the ROD must explain how the nine criteria at 40 C.F.R. § 300.430 (f)(5)(i) were used to select the remedy. These nine criteria are categorized into three groups: threshold, balancing, and modifying. The first two criteria, overall protection of human health and the environment and compliance with ARARs, are threshold criteria that the Selected Remedy must meet. The Selected Remedy must then represent the best balance of the following five primary balancing criteria: long-term effectiveness and permanence; reduction of toxicity, mobility or volume of contaminants through treatment; short-term effectiveness; implementability; and cost. The final two criteria, state and community acceptance, are referred to as modifying criteria.

In accordance with the NCP, the nine criteria are used to evaluate the different remediation alternatives individually and against each other to select a remedy. This section of the ROD profiles the relative performance of each alternative against the nine criteria, noting how it compares to the other options under consideration. The detailed analysis of alternatives can be found in the March 2020 Final Feasibility Study.

17.1. Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled, through treatment, engineering controls, and/or institutional controls.

Alternative 1 would not protect human health and the environment from the contamination in the groundwater at OU4. Since no action would be conducted under Alternative 1, the potential for exposure

to the contaminants left on-site would exist if further use, development, or re-zoning of the Substation property occurred.

Alternatives 2 and 3 would both be protective of human health and the environment because groundwater contaminants that exceed MCLs would be removed and the community would be protected from exposure through the use of engineering and institutional controls.

17.2 Compliance with ARARs

Section 121(d) of CERCLA and NCP § 300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites attain ARARs unless such ARARs are waived under CERCLA section 121(d)(4). ARARs include substantive provisions of any promulgated federal or more stringent state environmental standards, requirements, criteria, or limitations that are determined to be legally ARARs for a CERCLA site or action. Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, or contaminant; remedial action; location; or other circumstance at a CERCLA site. Relevant and appropriate requirements, while not legally applicable to circumstances at a particular CERCLA site, address problems or situations similar to those encountered at the site, such that their use is considered relevant and appropriate. (See Appendix A, Table 19 ARARs table.)

Alternative 1 does not comply with chemical-specific ARARs. Since Alternative 1 does not meet the threshold criteria, it will no longer be carried through the analysis of all nine criteria. Alternatives 2 and 3 comply with chemical-specific ARARs and action-specific ARARs.

17.3 Long-term Effectiveness and Permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been met. This criterion includes the consideration of residual risk that will remain on site following remediation and the adequacy and reliability of controls.

Alternatives 2 and 3 would remove contaminants from groundwater and eliminate residual risk at OU4.

17.4 Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment

This criterion evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants; the degree of expected reduction in toxicity, mobility or volume; the type and quantity of treatment residuals; the degree to which the treatment will be irreversible; and the risk posed by residual contamination.

Alternatives 2 and 3 would reduce the toxicity, mobility, and volume of on-site contaminants over time. The potential for exposure during the attenuation processes would be evaluated through groundwater monitoring. Alternatives 2 and 3 would involve treatment of contaminated groundwater, thus meeting the statutory preference for treatment as a principal element; hence, reducing mobility, toxicity, and volume of contaminants.

17.5 Short-term Effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and mitigate any adverse impacts that may be posed to workers, the community, and the environment during construction and operation of the remedy until cleanup levels are achieved.

As noted above, actions associated with Alternatives 2 and 3 have been completed through the various pilot studies, and if additional actions are necessary, would have minimal adverse impacts to workers, the community or the environment. Both of these alternatives are expected to take approximately ten years to reach cleanup goals.

17.6 Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

Alternatives 2 and 3 have remedies that have previously been implemented at OU4 as pilot studies. The continuous operation of the alternatives is technically and administratively easy to implement.

17.7 Cost

This criterion evaluates the estimated capital, operation and maintenance, and present value costs (using a present value discount rate of 7%) of each alternative. The cost estimates are approximate and made without detailed engineering data. Cost estimates involve approximation, assumptions, estimations, interpretation, and engineering judgment. The actual cost of the project would depend on the final scope of the remedial actions and other factors presently unknown. Cost estimates are expected to be accurate within a range of +50 to -30 percent. The estimated annual total present worth cost for Alternatives 2 and 3 are:

Alternative 2	
Operation and Maintenance Costs	
Bio-Augmentation	\$35,000 per application
Chemical Oxidation	\$75,000 per application
Monitoring and Sampling	\$100,000 annually
Restart GETS (if necessary)	\$10,000 plus \$120,000 per year operation
Total Present Worth Cost	\$340,000

Alternative 3	
Operation and Maintenance Costs	
Bio-Augmentation	\$35,000 per application
Monitoring and Sampling	\$100,000 annually
Restart GETS (if necessary)	\$10,000 plus \$120,000 per year operation
Total Present Worth Cost	\$265,000

17.8 State Acceptance

This criterion considers whether the state, based on its review of the information, concurs with, opposes, or has no comment on the EPA's Selected Remedy. The state's authority regarding acceptance has been

delegated to MoDNR. The MoDNR concurs with the Selected Remedy. MoDNR's concurrence with the preferred remedial alternative as set forth in the Proposed Plan, and chosen as the Selected Remedy in this ROD, is included in Appendix D.

17.9 Community Acceptance

This criterion considers whether the local community agrees with the EPA's analysis and Preferred Alternative. Comments received on the Proposed Plan are important indicators of community acceptance.

The public comment period on the Proposed Plan for the preferred remedial action was February 2, 2021 through March 1, 2021. A virtual public meeting was held on February 9, 2021, to explain the Proposed Plan and all the alternatives presented in the FS. During the public meeting, no disagreement with the Preferred Alternative was expressed by individual members of the local community. Thirteen comments were received during the comment period; seven comments from commenter #1 and six comments from commenter #2. Both sets of comments were very similar in nature. The EPA's response to these comments can be found in the Responsiveness Summary in Appendix C. The full text of the transcript of the public meeting is included in the AR. The preferred alternative was not changed due to any comments received.

18.0 Principal Threat Waste

The NCP establishes an expectation that the EPA will use treatment to address the principal threats posed by a site whenever practicable (40 C.F.R. § 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for the migration of contamination to groundwater, surface water, or air, or act as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic or highly mobile, and that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of alternatives, using the remedy selection criteria described above. The manner in which principal threat wastes are addressed provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

Prior to the pilot studies, the Substation source area soil contamination was considered to be "principal threat waste" because the COCs were detected at concentrations that posed a significant risk. The COCs contained in the source area soils were moving into the groundwater and presenting a threat to the municipal water supply. However, the contaminated soils were addressed by ISCO. None of the remaining COC concentrations in Substation soil pose unacceptable human health risks under a residential exposure scenario. Although contaminated groundwater also poses a risk, it is not considered a "principal threat waste" as defined by EPA guidance. The principal threat wastes have been effectively treated through previous remedial actions at OU4.

19.0 Selected Remedy

This section expands upon the details of the Selected Remedy from that provided in the Description of Alternatives section of this ROD. This section provides the appropriate level of detail about the engineering details and estimated costs for the Selected Remedy so the design engineer has enough information to initiate the design phase of the response action. This will minimize the likelihood of

unanticipated changes to the scope and intent of the Selected Remedy. This discussion is organized in four sections: (1) Summary of the Rationale for the Selected Remedy; (2) Description of the Selected Remedy; (3) Summary of Estimated Remedy Costs; and (4) Expected Outcomes of the Selected Remedy.

19.1 Summary of the Rationale for the Selected Remedy

Based on the information currently available, the EPA believes that the Selected Remedy meets the two threshold criteria and provides the best balance of trade-offs among the other alternatives with respect to the balancing and modifying criteria. The EPA expects the Selected Remedy to satisfy the following statutory requirements of CERCLA § 121(b): 1) be protective of human health and the environment; 2) comply with ARARs (or justify a waiver); 3) be cost-effective; 4) use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element.

The Preferred Alternative in the Proposed Plan included a statement that prohibited the excavation of soil greater than 10 feet. This was identified based on an exceedance of the residential soil RSL for VC at 20 feet bgs. As discussed in Section 12.4, further examination of the samples with residential soil RSL exceedances showed that none of the concentrations pose a non-cancer hazard quotient greater than 1 or an excess cancer risk greater than 1×10^{-4} , which are the levels of risk that, when exceeded, warrant action under the NCP. Thus, while subsurface concentrations of some COCs at the Substation were elevated prior to the pilot studies, none of the concentrations detected after completion of the pilot studies pose unacceptable human health risks, and a prohibition on excavation is not necessary for the protection of human health. The prohibition on excavation of soil greater than 10 feet has been removed and is not part of the Selected Remedy.

The Selected Remedy was chosen over the other alternatives because it is expected to achieve the cleanup goal of reducing the concentration of chlorinated solvents in groundwater by the most cost-effective means and is easily implemented.

19.2 Description of the Selected Remedy

Although the EPA does not expect significant changes to this remedy, it may change somewhat as a result of changes in the plume. Any significant changes to the remedy described in this ROD would be documented by a memorandum to the file, an Explanation of Significant Differences (ESD), or a ROD Amendment, as appropriate and consistent with the applicable regulations and guidance.

Based upon consideration of CERCLA requirements, the detailed analysis of alternatives, and with the state's concurrence, the EPA has selected Alternative 3 – Enhanced Bio, GETS, and ICs. This remedy is selected because the pilot studies have already shown the GETS and enhanced bio to be viable technologies to remove chlorinated solvents from groundwater. Alternative 3 will also continue to achieve substantial risk reduction by both treating the source area under Transformer 2 and providing safe management of remaining material.

Based upon results obtained thus far from various pilot studies and confirmed by the most recent September 2020 sampling event, COCs at OU4 have responded to treatment applications and continue to degrade. Compliance with federal drinking water MCLs for the COCs is achievable within an acceptable remedial timeframe. All off-site monitoring wells (PZ 1-12) and approximately half of the 17 Substation monitoring wells already satisfy the RAO criteria. As reflected in monthly National Pollutant

Discharge Elimination System sampling, influent concentrations into the GETS (MW 5) of *cis*-1,2-DCE are well below the MCL and VC is at 3.8 µg/L (MCL is 2.0 µg/L).

The Selected Remedy includes the following:

- Naturally occurring *Dehalococcoides*, an anerobic bacteria capable of reductive dechlorination, along with nutrients to support the bacteria (enhanced bioaugmentation), have been injected downgradient from the Substation's Transformer 2, creating an attenuation zone that reduces COCs as groundwater passes through the zone;
- The existing GETS, in operation since 2014, can be placed in stand-by status to allow the enhanced bioaugmentation to continue to reduce the contaminant plume. While in standby status, inspection and maintenance of the GETS may be necessary to keep the system operational;
- Ongoing monitoring will be performed to confirm ongoing degradation and evaluate the need for additional bioaugmentation. Wells demonstrating compliance with the MCLs for an extended period and no longer needed for monitoring will be removed from monitoring and abandoned in accordance with state requirements. The specific wells designated for this purpose will be identified in a groundwater monitoring plan;
- A remedial action of restarting the GETS, or additional enhanced bioaugmentation, or a combination of the two, must be implemented if the MCL is exceeded for one event for any COC found in groundwater outside of the Substation, or there is an increasing Mann-Kendall trend of any COC in groundwater inside the Substation for four consecutive quarters. The GETS and/or enhanced bioaugmentation would continue to be implemented until the groundwater COCs show a declining Mann-Kendall trend for four consecutive quarters;
- ICs in the form of an environmental covenant, or other equivalent proprietary control, will be executed and filed with the Recorder of Deeds Office, prohibiting the installation of potable water wells and construction of buildings within the Substation without prior notification to and approval by the EPA and the state; and
- Engineering controls such as site or area berms and fencing to control exposure pathways. To ensure that public access to OU4 remains restricted, security measures will continue to be taken and documented at OU4, including fencing, locked gates, restricted access to approved personnel, digging restrictions, and soil management and disposal practices.

No significant changes have been made to the Selected Remedy identified in the Proposed Plan. However, two points need clarification and additional detail. The first point regards groundwater monitoring and additional biomass applications. The Proposed Plan states "Ongoing monitoring can be focused on biomass application areas to confirm ongoing degradation and evaluate potential for augmentation if necessary." The intention of this statement was neither to place limits on groundwater monitoring nor to indicate that additional biomass applications are currently required. Rather, groundwater monitoring will occur at the Site throughout the implementation of the remedy to monitor the continued effectiveness of the enhanced bio, to provide information for evaluation as to whether additional enhanced bio and/or restarting the GETS is needed, and to indicate when the RAOs have been achieved.

The second point is that there are no remaining COCs in soil, and thus no restriction on soil excavations is necessary. The Proposed Plan states "Ameren will execute and file with the Recorder of Deeds Office an environmental covenant, or other equivalent proprietary control, limiting the installation of potable water wells and soil excavations greater than 10 feet." However, as described above in Section 12.4 Extent of Contamination, although the concentrations of VC detected in a few deeper (> 20 feet bgs) post-pilot Substation soil samples exceed the EPA's residential soil RSL, none of the samples exceed a non-cancer hazard quotient of 1 or excess cancer risks of 1×10^{-4} , which are the levels of risk that, when

exceeded, warrant action under the NCP. None of the concentrations detected in any depth of soil after completion of the pilot studies pose unacceptable human health risks under a residential exposure scenario. Thus, no restriction on soil excavation at the Site is necessary.

The EPA believes the Selected Remedy meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The EPA expects the Selected Remedy to satisfy the following statutory requirements of CERCLA § 121(b): (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost-effective; and (4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

19.3 Cost Estimate for the Selected Remedy

The total present worth cost for enhanced bio, restart of the GETS, and quarterly groundwater sampling is \$265,000 per year. This figure does not include additional dollars if more than one bioaugmentation is needed per year. The total present worth cost provides an annualized breakdown of capital, annual, and periodic costs. The capital cost of the GETS is not included in this amount since it has already been installed (see table below). More details on the development of the cost estimates can be found in the FS.

Alternative 3 Operation and Maintenance Costs	
Bio-Augmentation	\$35,000 per application
Monitoring and Sampling	\$100,000 annually
Restart GETS (if necessary)	\$10,000 plus \$120,000 per year operation
Total Present Worth Cost	\$265,000

The information in this cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Major changes may be documented in the form of a memorandum to the AR file, an ESD, or a ROD Amendment. This is an engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

19.4 Estimated Outcomes of the Selected Remedy

The Selected Remedy will: 1) be protective of human health and the environment, 2) comply with ARARs; 3) be cost effective; and 4) utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. There will be no negative impact to the socio-economic environment. The Selected Remedy is expected to achieve the RAOs identified for OU4.

The RAOs developed for OU4 are:

- Prevent exposure to the COCs above their MCLs in groundwater;
- Prevent potential future risks to human receptors from inhalation of groundwater COCs via the vapor intrusion pathway;
- Prevent future migration of groundwater contamination off-site; and
- Restore groundwater to beneficial use (i.e., at or below MCLs) within a reasonable timeframe.

The Selected Remedy's timeframe to attain RAOs in approximately 10 years. The cleanup levels for the COCs are shown in the table below.

COC	MCL (µg/L)
PCE	5
TCE	5
<i>cis</i> -1,2-DCE	70
<i>trans</i> -1,2-DCE	100
1,1-Dichloroethene	7
VC	2

19.4.1 Available Land Uses

The Selected Remedy will not alter the current land use at OU4, which is industrial use. The Selected Remedy will meet risk reduction criteria for the unlikely scenario of a future residential land use; however, OU4 will likely remain an electrical substation for the foreseeable future.

19.4.2 Available Groundwater Uses

The Selected Remedy will be protective of groundwater because the Selected Remedy, which is already operating, will be used to restore groundwater to its beneficial use as a source of drinking water. Current estimates indicate that cleanup levels will be attained throughout the contaminated portion of the aquifer in approximately 10 years.

20.0 Statutory Determinations

Under CERCLA Section 121, 42 U.S.C. § 9621, and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), are cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The following sections discuss how the Selected Remedy meets these statutory requirements.

20.1 Protection of Human Health and the Environment

The Selected Remedy will restore the groundwater to beneficial use (i.e., drinking water use). The current potential for exposure to the groundwater contamination would be controlled by implementation of institutional controls. There are no short-term threats associated with the Selected Remedy. In addition, no adverse cross-media impacts are expected from the Selected Remedy.

20.2 Compliance with ARARs

Sections 300.430(f)(5)(ii)(B) and (C) of the NCP require that a ROD describe federal and state ARARs that the Selected Remedy will attain or provide a justification for any waivers. The Selected Remedy will comply with all ARARs. Groundwater will be in compliance with ARARs. Because the lower aquifer meets the characteristics of a potential drinking water supply, the MCL drinking water standards are considered relevant and appropriate.

20.3 Cost-Effectiveness

Cost-effectiveness is determined by evaluating the remedy's long-term effectiveness and permanence; reduction in toxicity, mobility, or volume through treatment; and short-term effectiveness. If the overall cost of the remedy is proportional to its overall effectiveness, then it is considered to be cost-effective. The Selected Remedy at an estimated cost of \$265,000 satisfies the criteria listed above because it offers a permanent solution through the degradation of contaminants in groundwater while also costing less than other evaluated alternatives. Therefore, the Selected Remedy is cost-effective.

20.4 Utilization of Permanent Solutions to the Maximum Extent Practicable

The EPA has determined the Selected Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at OU4. When compared to the other alternatives that were evaluated, the EPA has determined the Selected Remedy provides the best balance of tradeoffs in terms of the five balancing criteria and state and community acceptance.

The Selected Remedy was selected over the other groundwater alternatives because it will achieve cleanup goals by the most cost-effective means, provide substantial and long-term risk reduction through bioaugmentation and groundwater extraction, and is easily implemented. The Selected Remedy is expected to allow the Substation and surrounding properties to be used for future land use, which could be residential. The Selected Remedy satisfies the criteria for long-term effectiveness through ICs and the degradation of contaminants in groundwater.

20.5 Preference for Treatment as a Principal Element

Prior to conducting the pilot studies in 2014, the source area soil contamination was considered to be principal threat waste because the COCs were detected at concentrations that posed a significant risk. The COCs contained in the source area soils were moving into the groundwater and presenting a threat to the municipal water supply. However, when the last pilot study was completed in 2018, the contaminated soils were addressed by ISCO, enhanced bio, and GETS, and soil confirmation sampling results indicate PCE concentrations were below the soil cleanup level of 60 µg/kg. The principal threat wastes in soil have been effectively treated and/or removed through the four pilot studies at OU4. Although contaminated groundwater also poses a risk, it is not considered a principal threat waste as defined by EPA guidance.

20.6 Five-Year Review Requirements

CERCLA Section 121 and the NCP require a review of remedial actions (RAs) at least every five years if the RA results in hazardous substances, pollutants, or contaminants remaining in place above levels that allow for unlimited use and unrestricted exposure. Because the Selected Remedy will result in hazardous substances, pollutants or contaminants remaining on site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of the RA to ensure that the remedy is, or will be, protective of human health and the environment.

21.0 Documentation of Significant Changes

To fulfill CERCLA §117(b) and NCP §§ 300.430(f)(5)(iii)(B) and 300.430(f)(3)(ii)(A) requirements, the ROD must document and discuss the reasons for any significant changes made to the Selected Remedy. Changes described in this section must be limited to those that could have been reasonably

anticipated by the public from the time the Proposed Plan and RI/FS Report were released for public comment to the final selection of the remedy.

The Proposed Plan for Findett OU4 was released for public comment on February 2, 2021. The Proposed Plan identified the Preferred Alternative – Enhanced Bio, GETS, and ICs. The EPA received two sets of comments/questions during the public comment period; seven from commenter #1 and six from commenter #2. Both sets of comments were very similar in nature. Based on an evaluation of those comments, it was determined that no significant changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.

PART III: RESPONSIVENESS SUMMARY

This responsiveness summary has been prepared in accordance with CERCLA and the NCP. This document provides the EPA’s response to all significant comments received regarding the Proposed Plan from the public during the public comment period.

On February 2, 2021, the EPA published the Proposed Plan, which discussed the EPA’s proposed actions necessary to protect the public health, welfare, and the environment from actual or threatened releases of hazardous substances into the environment. The public comment period on the Proposed Plan was from February 2, 2021 through March 1, 2021.

On February 9, 2021, the EPA held a public meeting using virtual internet technologies. The Proposed Plan for OU4 was presented at the public meeting and a court reporter recorded the proceedings of the meeting. Copies of the transcript and attendance list are included in the AR. The public comment period and the public meeting were intended to elicit public comment on the Proposed Plan. The EPA received and responded to 13 comments/questions on the Proposed Plan (Appendix C). No change was made to the remedy as a result of these comments.

APPENDIX A TABLES

**TABLE 1: SELECTION OF EXPOSURE PATHWAYS AMEREN MISSOURI HUSTER
SUBSTATION
ST. CHARLES, MISSOURI FILE NO. 130500**

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
CURRENT	Groundwater	North of Levee Groundwater	North of Levee	Resident	Adult	Dermal Inhalation Ingestion	None None None	Although groundwater north of the levee is used as a source of drinking water for public water supply, no Site -related constituents have been detected in the City Wells since February 2016, and installation of private supply wells in the area north of the levee is prohibited by local ordinance. There are no occupied buildings in that area. Therefore, under current use conditions, there are no complete exposure pathways to off-site groundwater.
					Child	Dermal Inhalation Ingestion	None None None	
				C/I Worker	Adult	Dermal Inhalation Ingestion	None None None	
				Construction Worker	Adult	Dermal Inhalation Ingestion	None None None	
	Soil/ Groundwater	Indoor Air	Substation and North of Levee	Resident	Adult	Inhalation	None	There are no occupied structures at the Substation, and it is not anticipated that occupied structures will be built at the Substation in the future. The shortest distance between the leading edge of the plume and the nearest building is approximately 300 feet (building located to the north of Huster Road). Therefore, vapor intrusion of VOCs from site soil/groundwater to indoor air is not a current complete exposure pathway.
					Child	Inhalation	None	
				C/I Worker	Adult	Inhalation	None	
CURRENT/ FUTURE	Soil	Soil 0 - 2 ft	Substation and North of Levee	C/I Worker	Adult	Dermal Ingestion	Quantitative Quantitative	Commercial workers are assumed to contact surface soil during outdoor activities, while working at the property.
		Soil 0-23 ft	Substation and North of Levee	Construction Worker	Adult	Dermal Ingestion	Quantitative Quantitative	Construction/excavation workers are assumed to incidentally ingest and dermally contact surface and subsurface soil during redevelopment work.
		Air - Dust	Substation and North of Levee	C/I Worker	Adult	Inhalation	Quantitative	Windborne dust can be inhaled by persons at or down-wind of unvegetated soil.
				Construction Worker	Adult	Inhalation	Quantitative	Excavation activities could produce dust.
		Air - Vapors	Substation and North of Levee	C/I Worker	Adult	Inhalation	Quantitative	VOCs partitioned from soil to outdoor air as vapors can be inhaled by persons at or down-wind of unvegetated soil.
				Construction Worker	Adult	Inhalation	Quantitative	VOCs partitioned from soil to outdoor air as vapors could be produced during excavation activities.
	Soil/ Groundwater	Surface Water	Surface Water	Recreational Visitor	Adult	Dermal Inhalation Ingestion	None None None	Although groundwater that discharges to surface water can result in migration of constituents to surface water, the Site investigation activities have demonstrated that VOCs are not present in downgradient groundwater at locations near surface water bodies, indicating that surface water is not a receiving medium for this Site.
					Child	Dermal Inhalation Ingestion	None None None	
FUTURE	Groundwater	Substation Groundwater	Substation	Resident	Adult	Dermal Inhalation Ingestion	Quantitative Quantitative Quantitative	There are no current potential exposure pathways associated with groundwater beneath the substation. Although the substation will not be used for any purposes other than as a substation, potential exposure pathways associated with groundwater beneath the substation will be evaluated for future residential drinking water exposures.
					Child	Dermal Inhalation Ingestion	Quantitative Quantitative Quantitative	

			C/I Worker	Adult	Dermal Inhalation Ingestion	None None None	The residential scenario is protective for commercial workers; therefore, a commercial worker scenario is not quantitatively evaluated.
			Construction Worker	Adult	Dermal Inhalation Ingestion	None None None	Groundwater is located at a depth (ranging from 12-23 ft bgs) that is greater than depths that would realistically be encountered during excavation activities, therefore direct contact with groundwater is not a complete exposure pathway for a construction worker.
Soil/ Groundwater	Indoor Air	Substation	Resident	Adult	Inhalation	Quantitative	The potential for vapor intrusion to be a complete pathway for future residential receptors if occupied buildings are constructed in the future is evaluated in the HHRA.
				Child	Inhalation	Quantitative	
			C/I Worker	Adult	Inhalation	None	The residential scenario is protective for commercial workers; therefore, a commercial worker scenario is not quantitatively evaluated.
Groundwater	North of Levee Groundwater	North of Levee	Resident	Adult	Dermal Inhalation Ingestion	Qualitative Qualitative Qualitative	Evaluation of groundwater as a future source of drinking water is based on analytical data for the core of the plume, which is located in the substation property.
				Child	Dermal Inhalation Ingestion	Qualitative Qualitative Qualitative	
			C/I Worker	Adult	Dermal Inhalation Ingestion	Qualitative Qualitative Qualitative	
			Construction Worker	Adult	Dermal Inhalation Ingestion	None None None	
Soil/ Groundwater	Indoor Air	North of Levee	Resident	Adult	Inhalation	None	Evaluation of groundwater as a future source of vapor intrusion is based on analytical data for the core of the plume, which is located in the substation property.
				Child	Inhalation	None	
			C/I Worker	Adult	Inhalation	None	

Notes:

bgs = below ground surface. C/I = Commercial/Industrial. ft = feet.

HHRA = Human Health Risk Assessment.

VOCs = Volatile Organic Compounds.

TABLE 2: SUMMARY OF SUBSTATION SURFACE SOIL DATA (0-2 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds									
526-73-8	1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene	0.0719	0.0719	mg/kg	SS-18 (0-3 ft)		200			No BSL
95-63-6	1,3,5-Trimethylbenzene	0.0482	0.0482	mg/kg	SS-18 (0-3 ft)	0.102	180			No BSL
108-67-8	2-Butanone (Methyl Ethyl Ketone)	0.0035 J	0.0035 J	mg/kg	SB-40 (1-2 ft)	0.102	150			No BSL
78-93-3	2-Phenylbutane (sec-Butylbenzene)	0.018 J	0.018 J	mg/kg	SB-40 (1-2 ft)	0.102	19000			No BSL
135-98-8	Acetone	0.0137	0.0137	mg/kg	SS-18 (0-3 ft)	1.02	12000			No BSL
67-64-1	Chloromethane (Methyl Chloride)	0.0085 J	0.41 J	mg/kg	SB-30 (0-3 ft)	0.102	67000			No BSL
74-87-3	cis-1,2-Dichloroethene	0.0062 J	0.0062 J	mg/kg	SB-36 (0-3 ft)	0.41	46			No BSL
156-59-2	Cymene (p-Isopropyltoluene)	0.0058	0.0079	mg/kg	SS-09 (0-3 ft)	0.204	230			No BSL
99-87-6	Ethylbenzene	0.0035	0.0035 J	mg/kg	SS-18 (0-3 ft)	0.102	990			No BSL
100-41-4	Isopropylbenzene	0.0014 J	0.0015 J	mg/kg	SB-40 (1-2 ft)	0.102	25			No BSL
98-82-8	(Cumene) m,p-Xylenes	0.001 J	0.0011 J	mg/kg	SS-18 (0-3 ft)	0.102	990			No BSL
179601-23-1	Methylene chloride o-	0.0011 J	0.0045 J	mg/kg	SB-40 (1-2 ft)	0.102	250			No BSL
75-09-2	Xylene	0.0009 J	0.098	mg/kg	SB-30 (0-3 ft)	0.102	320			No BSL
95-47-6	Tetrachloroethene	0.0014 J	0.002	mg/kg	SB-40 (1-2 ft)	0.098	280			No BSL
127-18-4	Toluene	0.0009 J	J 2	mg/kg	SS-09 (0-3 ft)	0.102 2	39			No BSL
108-88-3	Trichloroethene	0.0008 J	0.004 J	mg/kg	Dup SS-05 0-3 ft	0.102	4700			No BSL
79-01-6	PCBs	0.0173	0.107	mg/kg	SS-09 (0-3 ft)	0.107	1.9			No BSL
11096-82-5	Aroclor-1260 (PCB-1260)	0.022 J	0.022 J	mg/kg	SS-19 (0-3 ft)	0.0551	0.99			No BSL

TABLE 3: SUMMARY OF SUBSTATION SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF COPCS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (a)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (b)
	Volatile Organic Compounds			mg/kg						
75-35-4	1,1-Dichloroethene			mg/kg						
95-63-6	1,2,4-Trimethylbenzene	0.0012 J	0.0012 J	mg/kg	SB-14 (8-9 ft)	0.565	100			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.0021 J	0.0021 J	mg/kg	SB-28 dup (6-7 ft)	0.565	180			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.1 J	0.18	mg/kg	SB-41 (5-6 ft)	0.18	150			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.014 J	0.02 J	mg/kg	SB-44 (3-4 ft)	5.65	19000			No BSL
67-64-1	Acetone	0.0043 J	0.18	mg/kg	SB-41 (5-6 ft)	0.18	12000			No BSL
156-59-2	cis-1,2-Dichloroethene	0.011 J	0.66 J	mg/kg	SB-39 (7-8 ft)	5.65	67000			No BSL
100-41-4	Ethylbenzene	0.0017 J	10.7	mg/kg	SB-41 (5-6 ft)	10.7	230			No BSL
98-82-8	Isopropylbenzene	0.0012 J	0.17	mg/kg	SB-39 (7-8 ft)	0.17	25			No BSL
179601-23-1	(Cumene) m,p-Xylenes	0.059 J	0.3	mg/kg	SB-39 (7-8 ft)	0.3	990			No BSL
75-09-2	Methylene chloride n-	0.0012 J	0.12	mg/kg	SB-39 (7-8 ft)	0.15	250			No BSL
104-51-8	Butylbenzene n-	0.001 J	0.031 J	mg/kg	SB-39 (7-8 ft)	0.565	320			No BSL
103-65-1	Propylbenzene o-Xylene	0.063 J	0.063 J	mg/kg	SB-39 (7-8 ft)	0.565	5800			No BSL
95-47-6	Tetrachloroethene	0.03 J	0.23	mg/kg	SB-39 (7-8 ft)	0.23	2400			No BSL
127-18-4	Tetrahydrofuran	0.0014 J	0.0014 J	mg/kg	SB-28 dup (6-7 ft)	0.565	280			No BSL
109-99-9	Toluene	0.0012 J	35	mg/kg	SB-39 (7-8 ft)	35	39			No BSL
108-88-3	trans-1,2-Dichloroethene	0.13 J	0.13 J	mg/kg	SB-42 (2-3 ft)	5.65	9400			No BSL
156-60-5	Trichloroethene	0.0012 J	0.0114	mg/kg	SB-12 (9-10 ft)	0.565	4700			No BSL
79-01-6	Vinyl chloride	0.0012 J	0.0058 J	mg/kg	SB-11 (8-9 ft)	0.565	2300			No BSL
75-01-4		0.0026 J	6.78	mg/kg	SB-39 (7-8 ft)	6.78	1.9			Yes ASL
		0.0014 J	0.45	mg/kg	SB-39 (7-8 ft)	0.45	1.7			No BSL

TABLE 4: SUMMARY OF SUBSTATION SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF COPCS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e- 06) (a)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (b)
	Volatile Organic Compounds									
	1,1-Dichloroethene			mg/kg						
75-35-4	1,2,3-Trimethylbenzene	0.0009 J	0.0091	mg/kg	SB-10 (17-18 ft)	1.25	100			No BSL
526-73-8	1,2,4-Trimethylbenzene	0.059 J	0.059 J	mg/kg	SB-39 (14-15 ft)	1.25	200			No BSL
95-63-6	1,3,5-Trimethylbenzene	0.0021 J	0.048 J	mg/kg	SB-39 (14-15 ft)	1.25	180			No BSL
108-67-8	2-Phenylbutane(sec-	0.13 J	0.13 J	mg/kg	SB-41 (22-23 ft)	1.25	150			No BSL
135-98-8	Butylbenzene)	0.0016 J	0.15 J	mg/kg	SB-39 (14-15 ft)	1.25	12000			No BSL
67-64-1	Acetone	0.012 J	0.71	mg/kg	SB-39 (18-19 ft)	12.5	67000			No BSL
156-59-2	cis-1,2-Dichloroethene	0.0014 J	11.4	mg/kg	SB-41 (15-16 ft)	11.4	230			No BSL
179601-23-1	m,p-Xylenes	0.001 J	0.0029 J	mg/kg	SB-10 (17-18 ft)	1.25	250			No BSL
75-09-2	Methylene chloride	0.0011 J	0.0079	mg/kg	SB-14 (21-22 ft)	1.25	320			No BSL
104-51-8	n-Butylbenzene	0.23 J	0.23 J	mg/kg	SB-41 (14-15 ft)	1.25	5800			No BSL
103-65-1	n-Propylbenzene	0.1 J	0.1 J	mg/kg	SB-41 (14-15 ft)	1.25	2400			No BSL
95-47-6	o-Xylene	0.0015 J	0.0015 J	mg/kg	SB-30 (22-23 ft)	1.25	280			No BSL
127-18-4	Tetrachloroethene	0.0065	195	mg/kg	SB-41 (14-15 ft)	195	39			Yes ASL
108-88-3	Toluene	0.0009 J	0.0103	mg/kg	SB-15 (14-15 ft)	1.25	4700			No BSL
156-60-5	trans-1,2-Dichloroethene	0.001 J	0.0207	mg/kg	SB-10 (17-18 ft)	1.25	2300			No BSL
79-01-6	Trichloroethene	0.0016 J	14.4	mg/kg	SB-41 (15-16 ft)	14.4	1.9			Yes ASL
75-01-4	Vinyl chloride	0.0011 J	0.525	mg/kg	SB-41 (22-23 ft)	0.525	1.7			No BSL

TABLE 5: SUMMARY OF NORTH OF LEVEE SURFACE SOIL DATA (0-2 FT BGS) AND SELECTION OF COPCs
 AMEREN MISSOURI HUSTER SUBSTATION
 ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Residential Soil RSL (HI = 0.1, ELCR = 1e-06) (a)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (b)	
	Volatile Organic Compounds										
67-64-1	Acetone	0.016 J	0.016 J	mg/kg	SB-26 (0-3 ft)	0.0595	6100			No	BSL
75-09-2	Methylene chloride	0.0011 J	0.0018 J	mg/kg	SB-21 (1-2 ft)	0.0059	35			No	BSL
108-88-3	Toluene	0.0016 J	0.0032 J	mg/kg	SB-25 (0-3 ft)	0.0059	490			No	BSL

TABLE 6: SUMMARY OF NORTH OF LEVEE SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF COPCs
 AMEREN MISSOURI HUSTER SUBSTATION
 ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)	
	Volatile Organic Compounds										
67-64-1	Acetone	0.013 J	0.0573	mg/kg	SB-19 (4-5 ft)	0.0629	67000			No	BSL
75-09-2	Methylene chloride	0.0012 J	0.0024 J	mg/kg	SB-21 (7-8 ft)	0.0059	320			No	BSL
127-18-4	Tetrachloroethene	0.0016 J	0.0016 J	mg/kg	SB-21 (7-8 ft)	0.0063	39			No	BSL
108-88-3	Toluene	0.0012 J	0.0012 J	mg/kg	SB-18 (9-10 ft)	0.00731	4700			No	BSL

TABLE 7: SUMMARY OF NORTH OF LEVEE SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF COPCs
 AMEREN MISSOURI HUSTER SUBSTATION
 ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds									
67-64-1	Acetone	0.01 J	0.025 J	mg/kg	SB-26 (18-19 ft)	0.0628	67000			No BSL
179601-23-1	m,p-Xylenes	0.0011 J	0.002 J	mg/kg	SB-25 (11-12 ft)	0.0071	250			No BSL
75-09-2	Methylene chloride	0.001 J	0.0044 J	mg/kg	SB-26 (18-19 ft)	0.0063	320			No BSL
108-88-3	Toluene	0.0009 J	0.0052	mg/kg	SB-19 (14-15 ft)	0.0071	4700			No BSL

TABLE 8: SUMMARY OF SUBSTATION POST-REMEDIAL SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds									
526-73-8	1,2,3-Trimethylbenzene	0.0023 J	0.0023 J	mg/kg	IP-32-5.0	0.0786	200			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	0.0786	180			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.0015 J	0.0015 J	mg/kg	IP-32-5.0	0.0786	150			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.013 J	0.013 J	mg/kg	IP-32-5.0	0.983	19000			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	0.0786	12000			No BSL
67-64-1	Acetone	0.0568	0.0809	mg/kg	IP-32-5.0	0.983	67000			No BSL
71-43-2	Benzene	0.0004 J	0.0004 J	mg/kg	IP-32-5.0	0.0393	5.1			No BSL
75-15-0	Carbon disulfide	0.064 J	0.064 J	mg/kg	IP-33-5.0	0.115	350			No BSL
74-87-3	Chloromethane (Methyl Chloride)	0.13 J	0.14 J	mg/kg	IP-33-5.0	0.14	46			No BSL
99-87-6	Cymene (p-Isopropyltoluene)	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	0.0786	990			No BSL
110-54-3	Hexane	0.0023 BJ	0.072 BJ	mg/kg	IP-32-5.0	0.072	250			No BSL
75-09-2	Methylene chloride	0.0062 J	0.18 J	mg/kg	IP-32-5.0	0.18	320			No BSL
95-47-6	o-Xylene	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	0.157	280			No BSL
127-18-4	Tetrachloroethene	0.003 J	0.003 J	mg/kg	IP-28-6	0.0786	39			No BSL
108-88-3	Toluene	0.0005 J	0.0005 J	mg/kg	IP-32-5.0	0.0786	4700			No BSL
79-01-6	Trichloroethene	0.0006 J	0.0006 J	mg/kg	IP-28-6	0.0786	1.9			No BSL

TABLE 9: SUMMARY OF POST REMEDIAL SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF COPCS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Industrial Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds			mg/kg						
75-35-4	1,1-Dichloroethene	0.0007 J	0.0024	mg/kg	IP-28-15	0.0044	100			No BSL
526-73-8	1,2,3-Trimethylbenzene	0.0065	0.0065	mg/kg	IP-33-10	0.0065	200			No BSL
95-63-6	1,2,4-Trimethylbenzene	0.0019 J	0.0019 J	mg/kg	IP-33-10	0.0044	180			No BSL
108-67-8	1,3,5-Trimethylbenzene	0.0111	0.0111	mg/kg	IP-33-10	0.0111	150			No BSL
78-93-3	2-Butanone (Methyl Ethyl Ketone)	0.008	0.0091 J	mg/kg	IP-29-10.5	0.0544	19000			No BSL
135-98-8	2-Phenylbutane (sec-Butylbenzene)	0.0241	0.0241	mg/kg	IP-33-10	0.0241	12000			No BSL
67-64-1	Acetone	0.0245	0.0581	mg/kg	IP-29-10.5	0.0581	67000			No BSL
75-15-0	Carbon disulfide	0.0011 J	0.0041 J	mg/kg	IP-29-10.5	0.0109	350			No BSL
156-59-2	cis-1,2-Dichloroethene	0.0017 J	3.86	mg/kg	IP-36-20.5	3.86	230			No BSL
99-87-6	Cymene (p-Isopropyltoluene)	0.0037	0.0037	mg/kg	IP-33-10	0.0044	990			No BSL
100-41-4	Ethylbenzene	0.0021 J	0.0021 J	mg/kg	IP-33-10	0.0044	25			No BSL
110-54-3	Hexane	0.0014 BJ	0.0054 BJ	mg/kg	IP-38-14	0.0054	250			No BSL
98-82-8	Isopropylbenzene (Cumene)	0.0009 J	0.0009 J	mg/kg	IP-33-10	0.0044	990			No BSL
179601-23-1	m,p-Xylenes	0.0039 J	0.0039 J	mg/kg	IP-33-10	0.0087	250			No BSL
75-09-2	Methylene chloride	0.005 J	0.012 J	mg/kg	IP-38-14	0.012	320			No BSL
104-51-8	n-Butylbenzene	0.0322	0.0322	mg/kg	IP-33-10	0.0322	5800			No BSL
103-65-1	n-Propylbenzene	0.0074	0.0074	mg/kg	IP-33-10	0.0074	2400			No BSL
95-47-6	o-Xylene	0.0014 J	0.0014 J	mg/kg	IP-33-10	0.0087	280			No BSL
127-18-4	Tetrachloroethene Toluene	0.0007 J	0.0368	mg/kg	IP-28-15	0.0368	39			No BSL
108-88-3	trans-1,2-Dichloroethene	0.0005 BJ	0.0005 BJ	mg/kg	IP-36-20.5	0.0044	4700			No BSL
156-60-5	Trichloroethene	0.0015 J	0.0583	mg/kg	IP-36-20.5	0.0583	2300			No BSL
79-01-6	Vinyl chloride	0.0009 J	0.0019	mg/kg	IP-28-15	0.0044	1.9			No BSL
		0.0011 J	0.295	mg/kg	IP-36-20.5	0.295	1.7			No BSL

TABLE 10: SUMMARY OF SUBSTATION POST-REMEDIATION SUBSURFACE SOIL DATA (2-10 FT BGS) AND SELECTION OF RESIDENTIAL COPCs
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Residential Soil RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
526-73-8	Volatile Organic Compounds			mg/kg						No BSL
95-63-6	1,2,3-Trimethylbenzene	0.0023 J	0.0023 J	mg/kg	IP-32-5.0	0.0786	34			No BSL
108-67-8	1,2,4-Trimethylbenzene	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	0.0786	30			No BSL
78-93-3	1,3,5-Trimethylbenzene	0.0015 J	0.0015 J	mg/kg	IP-32-5.0	0.0786	27			No BSL
135-98-8	2-Butanone (Methyl Ethyl Ketone)	0.013 J	0.013 J	mg/kg	IP-32-5.0	0.983	2700			No BSL
67-64-1	2-Phenylbutane (sec-Butylbenzene)	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	0.0786	780			No BSL
71-43-2	Acetone	0.0568	0.0809	mg/kg	IP-32-5.0	0.983	6100			No BSL
75-15-0	Benzene	0.0004 J	0.0004 J	mg/kg	IP-32-5.0	0.0393	1.2			No BSL
74-87-3	Carbon disulfide	0.064 J	0.064 J	mg/kg	IP-33-5.0	0.115	77			No BSL
99-87-6	Chloromethane (Methyl Chloride)	0.13 J	0.14 J	mg/kg	IP-33-5.0	0.14	11			No BSL
110-54-3	Cymene (p-Isopropyltoluene)	0.0009 J	0.0009 J	mg/kg	IP-32-5.0	0.0786	190			No BSL
75-09-2	Hexane	0.0023 BJ	0.072 BJ	mg/kg	IP-32-5.0	0.072	61			No BSL
95-47-6	Methylene chloride	0.0062 J	0.18 J	mg/kg	IP-32-5.0	0.18	35			No BSL
127-18-4	o-Xylene	0.0007 J	0.0007 J	mg/kg	IP-32-5.0	0.157	65			No BSL
108-88-3	Tetrachloroethene	0.003 J	0.003 J	mg/kg	IP-28-6	0.0786	8.1			No BSL
79-01-6	Toluene	0.0005 J	0.0005 J	mg/kg	IP-32-5.0	0.0786	490			No BSL
	Trichloroethene	0.0006 J	0.0006 J	mg/kg	IP-28-6	0.0786	0.41			No BSL

TABLE 11: SUMMARY OF POST REMEDIAL SUBSURFACE SOIL DATA (10-23 FT BGS) AND SELECTION OF RESIDENTIAL COPCS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Residential Soil RSL (HI = 0.1, ELCR = 1e- 06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)
	Volatile Organic Compounds									
	1,1-Dichloroethene			mg/kg						
75-35-4	1,2,3-Trimethylbenzene	0.0007 J	0.0024	mg/kg	IP-28-15	0.0044	23			No BSL
526-73-8	1,2,4-Trimethylbenzene	0.0065	0.0065	mg/kg	IP-33-10	0.0065	34			No BSL
95-63-6	1,3,5-Trimethylbenzene	0.0019 J	0.0019 J	mg/kg	IP-33-10	0.0044	30			No BSL
108-67-8	2-Butanone (Methyl Ethyl Ketone)	0.0111	0.0111	mg/kg	IP-33-10	0.0111	27			No BSL
78-93-3	2-Phenylbutane (sec-Butylbenzene)	0.008	0.0091 J	mg/kg	IP-29-10.5	0.0544	2700			No BSL
135-98-8	Acetone	0.0241	0.0241	mg/kg	IP-33-10	0.0241	780			No BSL
67-64-1	Carbon disulfide	0.0245	0.0581	mg/kg	IP-29-10.5	0.0581	6100			No BSL
75-15-0	cis-1,2-Dichloroethene	0.0011 J	0.0041 J	mg/kg	IP-29-10.5	0.0109	77			No BSL
156-59-2	Cymene (p-Isopropyltoluene)	0.0017 J	3.86	mg/kg	IP-36-20.5	3.86	16			No BSL
99-87-6	Ethylbenzene	0.0037	0.0037	mg/kg	IP-33-10	0.0044	190			No BSL
100-41-4	Hexane	0.0021 J	0.0021 J	mg/kg	IP-33-10	0.0044	5.8			No BSL
110-54-3	Isopropylbenzene	0.0014 BJ	0.0054 BJ	mg/kg	IP-38-14	0.0054	61			No BSL
98-82-8	(Cumene)	0.0009 J	0.0009 J	mg/kg	IP-33-10	0.0044	190			No BSL
179601-23-1	m,p-Xylenes	0.0039 J	0.0039 J	mg/kg	IP-33-10	0.0087	58			No BSL
75-09-2	Methylene chloride	0.005 J	0.012 J	mg/kg	IP-38-14	0.012	35			No BSL
104-51-8	n-Butylbenzene	0.0322	0.0322	mg/kg	IP-33-10	0.0322	390			No BSL
103-65-1	n-Propylbenzene	0.0074	0.0074	mg/kg	IP-33-10	0.0074	380			No BSL
95-47-6	o-Xylene	0.0014 J	0.0014 J	mg/kg	IP-33-10	0.0087	65			No BSL
127-18-4	Tetrachloroethene	0.0007 J	0.0368	mg/kg	IP-28-15	0.0368	8.1			No BSL
108-88-3	Toluene	0.0005 BJ	0.0005 BJ	mg/kg	IP-36-20.5	0.0044	490			No BSL
156-60-5	trans-1,2-Dichloroethene	0.0015 J	0.0583	mg/kg	IP-36-20.5	0.0583	160			No BSL
79-01-6	Trichloroethene	0.0009 J	0.0019	mg/kg	IP-28-15	0.0044	0.41			No BSL
75-01-4	Vinyl chloride	0.0011 J	0.295	mg/kg	IP-36-20.5	0.295	0.059			Yes ASL

TABLE 12: SUMMARY OF SUBSTATION GROUNDWATER DATA AND SELECTION OF COPCs AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Tap Water RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)	November 2018 Vapor Intrusion Screening Level (VISL) (d)	Concentration Used for Screening Exceeds VISL?
	Volatile Organic Compounds											
75-35-4	1,1-Dichloroethene	0.0037 J	0.16 J	mg/L	MW-13- 20180314	2.5	0.028	0.007 MCL		Yes ASL	0.257	Yes
67-64-1	Acetone	0.0051	0.007 J	mg/L	MW-40- 20170907	12.5	1.4			Yes ASL	31000	No
156-59-2	cis-1,2-Dichloroethene	0.0015 J	88	mg/L	MW 41- 20180314	88	0.0036	0.07 MCL		Yes ASL	NA	No
127-18-4	Tetrachloroethene	0.0016 J	0.519	mg/L	MW 41- 20180606	2.5	0.0041	0.005 MCL		Yes ASL	0.0872	Yes
108-88-3	Toluene	0.0018 J	0.0018 J	mg/L	MW 14- 20170905	2.5	0.11	1 MCL		Yes ASL	28.5	No
156-60-5	trans-1,2-Dichloroethene	0.0005 J	1.5 J	mg/L	MW 41- 20180314	2.5	0.036	0.1 MCL		Yes ASL	NA	No
79-01-6	Trichloroethene	0.0002 J	0.36	mg/L	MW 41- 20180606	2.5	0.00028	0.005 MCL		Yes ASL	0.00742	Yes
75-01-4	Vinyl chloride	0.0008 J	11.5	mg/L	MW 41- 20171206	11.5	0.000019	0.002 MCL		Yes ASL	0.00178	Yes

TABLE 13: SUMMARY OF NORTH OF LEVEE GROUNDWATER DATA AND SELECTION OF COPCS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

CAS No.	Parameter	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Units	Location of Maximum Detect	Concentration Used for Screening (a)	November 2018 Tap Water RSL (HI = 0.1, ELCR = 1e-06) (b)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	Selected as a COPC? (c)	November 2018 Vapor Intrusion Screening Level (VISL) (d)	Concentration Used for Screening Exceeds VISL?
156-59-2	Volatile Organic Compounds cis-1,2-Dichloroethene	0.0003 J	0.0142	mg/L	PZ-2-20180605	0.0142	0.0036	0.07 MCL	Yes	ASL	NA	No
179601-23-1	m,p-Xylenes	0.0012 J	0.0012 J	mg/L	PZ-1-20170907	0.005	0.019	10 MCL	No	BSL	0.6	No
127-18-4	Tetrachloroethene	0.0003 J	0.0003 J	mg/L	PZ-2-20170907	0.005	0.0041	0.005 MCL	Yes	ASL	0.0872	No
108-88-3	Toluene	0.0011 J	0.0013 J	mg/L	PZ-6-20180606	0.005	0.11	1 MCL	No	BSL	28.5	No
79-01-6	Trichloroethene	0.0002 J	0.0004 J	mg/L	PZ-11-20170906	0.005	0.00028	0.005 MCL	Yes	ASL	0.00742	No
75-01-4	Vinyl chloride	0.0001 J	0.0006	mg/L	PZ-11-20180605	0.002	0.000019	0.002 MCL	Yes	ASL	0.00178	Yes

TABLE 14: SELECTION OF EXPOSURE PATHWAYS AMEREN MISSOURI HUSTER
SUBSTATION
ST. CHARLES, MISSOURI FILE NO. 130500

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
CURRENT	Groundwater	North of Levee Groundwater	North of Levee	Resident	Adult	Dermal Inhalation Ingestion	None None None	Although groundwater north of the levee is used as a source of drinking water for public water supply, no Site -related constituents have been detected in the City Wells since February 2016, and installation of private supply wells in the area north of the levee is prohibited by local ordinance. There are no occupied buildings in that area. Therefore, under current use conditions, there are no complete exposure pathways to off-site groundwater.
					Child	Dermal Inhalation Ingestion	None None None	
				C/I Worker	Adult	Dermal Inhalation Ingestion	None None None	
				Construction Worker	Adult	Dermal Inhalation Ingestion	None None None	
	Soil/ Groundwater	Indoor Air	Substation and North of Levee	Resident	Adult	Inhalation	None	There are no occupied structures at the Substation, and it is not anticipated that occupied structures will be built at the Substation in the future. The shortest distance between the leading edge of the plume and the nearest building is approximately 300 feet (building located to the north of Huster Road). Therefore, vapor intrusion of VOCs from site soil/groundwater to indoor air is not a current complete exposure pathway.
					Child	Inhalation	None	
				C/I Worker	Adult	Inhalation	None	
CURRENT/ FUTURE	Soil	Soil 0 - 2 ft	Substation and North of Levee	C/I Worker	Adult	Dermal Ingestion	Quantitative Quantitative	Commercial workers are assumed to contact surface soil during outdoor activities, while working at the property.
		Soil 0-23 ft	Substation and North of Levee	Construction Worker	Adult	Dermal Ingestion	Quantitative Quantitative	Construction/excavation workers are assumed to incidentally ingest and dermally contact surface and subsurface soil during redevelopment work.
		Air - Dust	Substation and North of Levee	C/I Worker	Adult	Inhalation	Quantitative	Windborne dust can be inhaled by persons at or down-wind of unvegetated soil.
				Construction Worker	Adult	Inhalation	Quantitative	Excavation activities could produce dust.
		Air - Vapors	Substation and North of Levee	C/I Worker	Adult	Inhalation	Quantitative	VOCs partitioned from soil to outdoor air as vapors can be inhaled by persons at or down-wind of unvegetated soil.
				Construction Worker	Adult	Inhalation	Quantitative	VOCs partitioned from soil to outdoor air as vapors could be produced during excavation activities.
	Soil/ Groundwater	Surface Water	Surface Water	Recreational Visitor	Adult	Dermal Inhalation Ingestion	None None None	Although groundwater that discharges to surface water can result in migration of constituents to surface water, the Site investigation activities have demonstrated that VOCs are not present in downgradient groundwater at locations near surface water bodies, indicating that surface water is not a receiving medium for this Site.
					Child	Dermal Inhalation Ingestion	None None None	
FUTURE	Groundwater	Substation Groundwater	Substation	Resident	Adult	Dermal Inhalation Ingestion	Quantitative Quantitative Quantitative	There are no current potential exposure pathways associated with groundwater beneath the substation. Although the substation will not be used for any purposes other than as a substation, potential exposure pathways associated with groundwater beneath the substation will be evaluated for future residential drinking water exposures.
					Child	Dermal Inhalation Ingestion	Quantitative Quantitative Quantitative	

			C/I Worker	Adult	Dermal Inhalation Ingestion	None None None	The residential scenario is protective for commercial workers; therefore, a commercial worker scenario is not quantitatively evaluated.
			Construction Worker	Adult	Dermal Inhalation Ingestion	None None None	Groundwater is located at a depth (ranging from 12-23 ft bgs) that is greater than depths that would realistically be encountered during excavation activities, therefore direct contact with groundwater is not a complete exposure pathway for a construction worker.
Soil/ Groundwater	Indoor Air	Substation	Resident	Adult	Inhalation	Quantitative	The potential for vapor intrusion to be a complete pathway for future residential receptors if occupied buildings are constructed in the future is evaluated in the HHRA.
				Child	Inhalation	Quantitative	
			C/I Worker	Adult	Inhalation	None	The residential scenario is protective for commercial workers; therefore, a commercial worker scenario is not quantitatively evaluated.
Groundwater	North of Levee Groundwater	North of Levee	Resident	Adult	Dermal Inhalation Ingestion	Qualitative Qualitative Qualitative	Evaluation of groundwater as a future source of drinking water is based on analytical data for the core of the plume, which is located in the substation property.
				Child	Dermal Inhalation Ingestion	Qualitative Qualitative Qualitative	
			C/I Worker	Adult	Dermal Inhalation Ingestion	Qualitative Qualitative Qualitative	
			Construction Worker	Adult	Dermal Inhalation Ingestion	None None None	
Soil/ Groundwater	Indoor Air	North of Levee	Resident	Adult	Inhalation	None	Evaluation of groundwater as a future source of vapor intrusion is based on analytical data for the core of the plume, which is located in the substation property.
				Child	Inhalation	None	
			C/I Worker	Adult	Inhalation	None	

Notes:

bgs = below ground surface. C/I = Commercial/Industrial.

ft = feet.

HHRA = Human Health Risk Assessment.

VOCs = Volatile Organic Compounds.

TABLE 15: CANCER TOXICITY DATA -- INHALATION
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

Constituent of Potential Concern	Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk: Inhalation Cancer Slope Factor	
	Value	Units		Source(s)	Date(s)
1,1-Dichloroethene	ND		Inadequate data	IRIS	March 2019
1,2-Dichloroethene (cis)	ND		Inadequate data	IRIS	March 2019
1,2-Dichloroethene (trans)	ND		Inadequate data	IRIS	March 2019
Acetone	NA		Cannot be determined	IRIS	March 2019
Tetrachloroethene	2.6E-07	(ug/m ³) ⁻¹	Likely to be carcinogenic in humans	IRIS	March 2019
Toluene	NA		D	IRIS	March 2019
Trichloroethene	4.1E-06	(ug/m ³) ⁻¹	Carcinogenic to humans	IRIS	March 2019
Vinyl Chloride	4.4E-06	(ug/m ³) ⁻¹	Known human carcinogen	IRIS	March 2019

Notes:

IRIS = USEPA Integrated Risk Information

System. m³ = cubic meter. ND = no data

available. ug = microgram

USEPA = United States Environmental Protection Agency

TABLE 16: NON-CANCER TOXICITY DATA -- ORAL/DERMAL
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

Constituent of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency Factor for Dermal (1)	Adjusted Dermal RfD (2)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/ Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s)
1,1-Dichloroethene	chronic	5.0E-02	mg/kg/day	100%	5.0E-02	mg/kg/day	Liver; fatty change	100/1	IRIS	March 2019
1,2-Dichloroethene (cis)	chronic	2.0E-03	mg/kg/day	100%	2.0E-03	mg/kg/day	Kidney; increased kidney weight	3,000	IRIS	March 2019
1,2-Dichloroethene (trans)	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Immunological; decreased antibody forming cells	3,000	IRIS	March 2019
Acetone	chronic	9.0E-01	mg/kg/day	100%	9.0E-01	mg/kg/day	Kidney; nephropathy	1,000/1	IRIS	March 2019
Tetrachloroethene	chronic	6.0E-03	mg/kg/day	100%	6.0E-03	mg/kg/day	CNS; neurotoxicity	100	IRIS	March 2019
Toluene	chronic	8.0E-02	mg/kg/day	100%	8.0E-02	mg/kg/day	Kidney; increased kidney weight	1,000/1	IRIS	March 2019
Trichloroethene	chronic	5.0E-04	mg/kg/day	100%	5.0E-04	mg/kg/day	Developmental; Immunological	10 to 1000	IRIS	March 2019
Vinyl Chloride	chronic	3.0E-03	mg/kg/day	100%	3.0E-03	mg/kg/day	Liver; liver cell polymorphism	30/1	IRIS	March 2019

Notes:

(1) Values obtained from RAGS Volume 1 (Part E, Supplemental Guidance for Dermal Risk Assessment, Interim Guidance, USEPA, 2004).

Per this guidance, a value of 100% is used for analytes without published values

(2) Adjusted Dermal RfD = Oral RfD x Oral Absorption Efficiency Factor for Dermal. Per RAGS Part E (USEPA, 2004), adjustments are only performed for chemicals that have an oral absorption efficiency of less than 50%.

chronic = chronic RfDs apply to exposure durations longer than seven years; the chronic value is used as the subchronic RfD if a subchronic RfD is not available. CNS = central nervous system. kg = kilogram.

TABLE 17: NON-CANCER TOXICITY DATA -- INHALATION
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

Constituent of Potential Concern	Chronic/ Subchronic	Inhalation RfC (1)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units			Source(s)	Date(s)
1,1-Dichloroethene	chronic	2.0E-01	mg/m ³	Liver; fatty change	30/1	IRIS	March 2019
1,2-Dichloroethene (cis)	chronic	ND				IRIS	March 2019
1,2-Dichloroethene (trans)	chronic	ND				IRIS	March 2019
Acetone	chronic	3.1E+01	mg/m ³	CNS	100	MRL	March 2019
Tetrachloroethene	chronic	4.0E-02	mg/m ³	CNS; neurotoxicity	100	IRIS	March 2019
Toluene	chronic	5.0E+00	mg/m ³	CNS; neurotoxicity	100	IRIS	March 2019
Trichloroethene	chronic	2.0E-03	mg/m ³	Developmental; Immunological	10 to 1000	IRIS	March 2019
Vinyl Chloride	chronic	1.0E-01	mg/m ³	Liver; liver cell polymorphism	30/1	IRIS	March 2019

Notes:

CNS = central nervous system.

chronic = chronic RfDs apply to exposure durations greater than 7 years; the chronic value is used as the subchronic RfD if a subchronic RfD is not available
IRIS = USEPA Integrated Risk Information System. m³ = cubic meter. mg = milligram.

MRL = Minimum Risk Level (ATSDR: chronic

MRLs). ND = no data available.

RfC = reference concentration.

TABLE 18: SITE RISK TO ORGANS
AMEREN MISSOURI HUSTER SUBSTATION
ST. CHARLES, MISSOURI

FILE NO. 130500		Exposure Medium	
		Substation Groundwater	
POTENTIAL RECEPTOR/ USE SCENARIO	EXPOSURE ROUTE AND MIGRATION PATHWAY	HAZARD INDEX	
Future Resident (Adult and Child)	Ingestion	825	2.E-01
	Dermal Contact	88	2.E-02
	Ambient Vapor Inhalation	37	1.E-02
	Total	950	2.E-01
		Target Organ	Hazard Quotient
	1,1-Dichloroethene	Liver	0.24
	Acetone	Kidney	0.0005
	1,2-Dichloroethene (cis)	Kidney	824
	1,2-Dichloroethene (trans)	Immune system	1.7
	Tetrachloroethylene	Nervous System	1.9
	Toluene	Kidney	0.002
	Trichloroethene	Developmental; Immune system	20.74
	Vinyl Chloride	Liver	102
	Sum: Liver		102
	Sum: Kidney		824
	Sum: Immune System		22.5
	Sum: Nervous System		1.9
	Sum: Developmental		20.7

Notes:

Risk calculations are provided in Attachment D.

ELCR = Excess Lifetime Cancer Risk.

- Hazard index is based on child receptor and is calculated as the hazards for child exposure to groundwater.
Cancer risk is the sum of risks for child exposure to groundwater and adult exposure to groundwater.

Table 19

TABLE A: STATE CHEMICAL-SPECIFIC REQUIREMENTS				
Contaminants	Maximum Concentration Allowed	Medium	Reason Why Requirement is an ARAR	Regulatory Citation
cis-1,2-DCE Tetrachloroethene Trichloroethene Vinyl Chloride	Federal MCLs	Drinking Water	Provides regulations and MCLs for public water supplies. State MCLs are equivalent to Federal MCLs	10 CSR 60-4.010
cis-1,2-DCE Tetrachloroethene Trichloroethene Vinyl Chloride	Federal MCLs	Surface Water and Groundwater	This rule sets forth limits for substances that might become discharged to various waters of the state.	10 CSR 20-7.015
cis-1,2-DCE Tetrachloroethene Trichloroethene Vinyl Chloride	Federal RSLs	Soils	This tool is based on Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals) (RAGs Part B) and Soil Screening Guidance: User's Guide (PDF) (89 pp), Technical Background Document (PDF) (447 pp) and Supplemental Guidance (PDF) (187 pp). RAGs Part B provides guidance on using EPA toxicity values and exposure information to calculate risk-based Screening Levels.	EPA/540/R-96/018 July 1996
cis-1,2-DCE Tetrachloroethene Trichloroethene Vinyl Chloride	EPA Action Levels	Air	Provides definitions and reference tables for hazardous substances located at the site.	10 CSR-6.020 https://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c10-6a.pdf

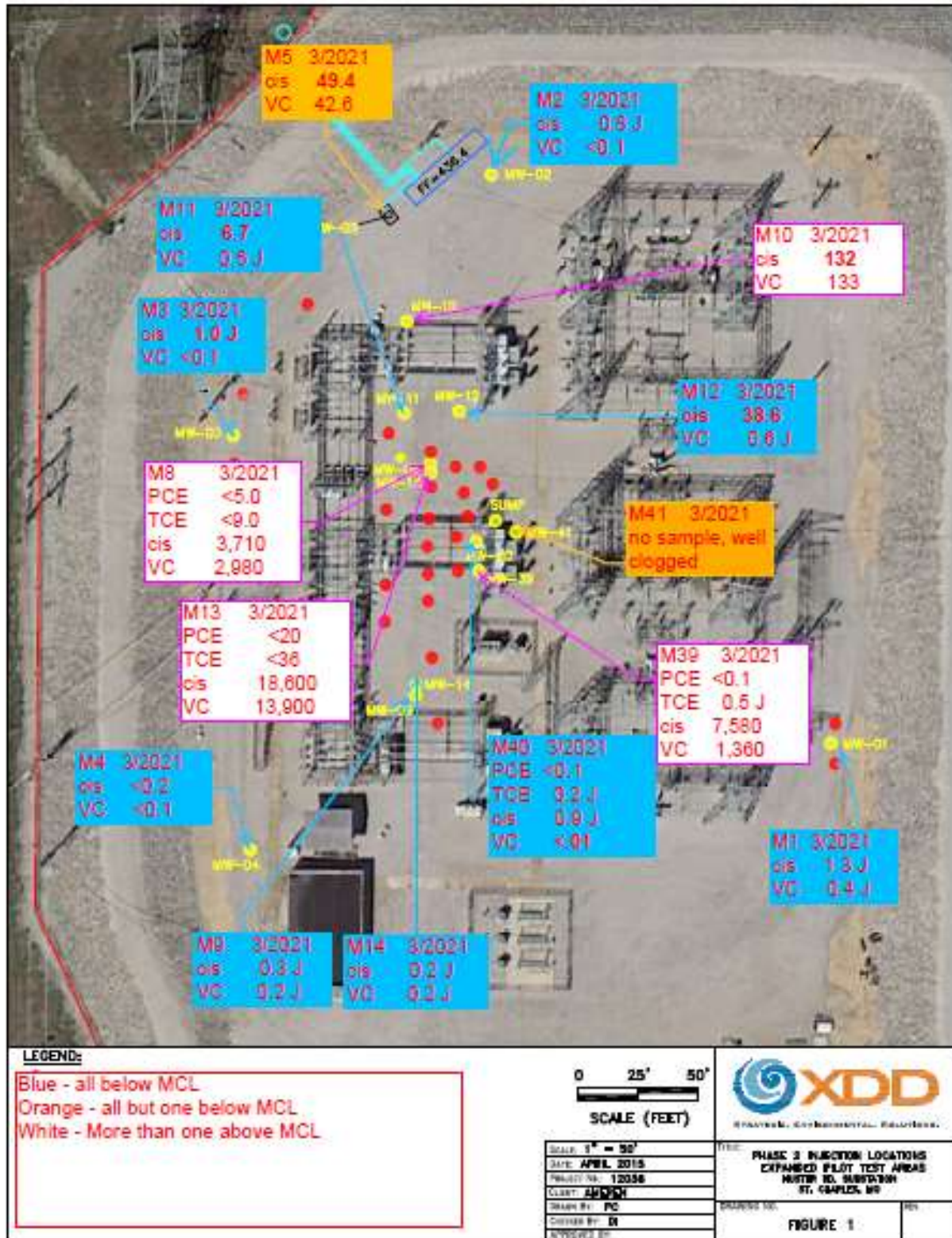
TABLE B: STATE LOCATION-SPECIFIC REQUIREMENTS			
Location Subject to Requirement	Requirement	Reason Why Requirement is an ARAR	Regulatory Citation
Applicable areas within or near site area.	Wildlife Code of Missouri	3-CSR 10-4.110 is the rule that prohibits the pursuit, . taking possession, or any use of wildlife except as provided in the codes. 3-CSR 10-4.111 is the rule that extends special protection to endangered wildlife and lists those species considered to be threatened with extinction. The Missouri Department of Conservation has guidance on how to handle these circumstances.	3-CSR 10-4.110 and 3-CSR 10-4.111

TABLE C: STATE ACTION-SPECIFIC REQUIREMENTS			
Action Subject to Requirement	Requirement	Reason Why Requirement is an ARAR	Regulatory Citation
Applicable to RI/FS for the Groundwater Containment System (GCS)	Water Pollution Control Regulations	Applies to all discharges to waters of the state for protection of the designated uses.	10 CSR 20-2 through 20-9
Applicable to RI/FS	Well Construction Rules	Sets forth rules and requirements	10 CSR 23-3 and 23-4

Table 20 – Pre-Pilot Study Groundwater Results



Table 21 – Post-Pilot Study Groundwater Results



APPENDIX B

FIGURES

Figure 1 – Findett Site



Figure 2 – Ameren Substation

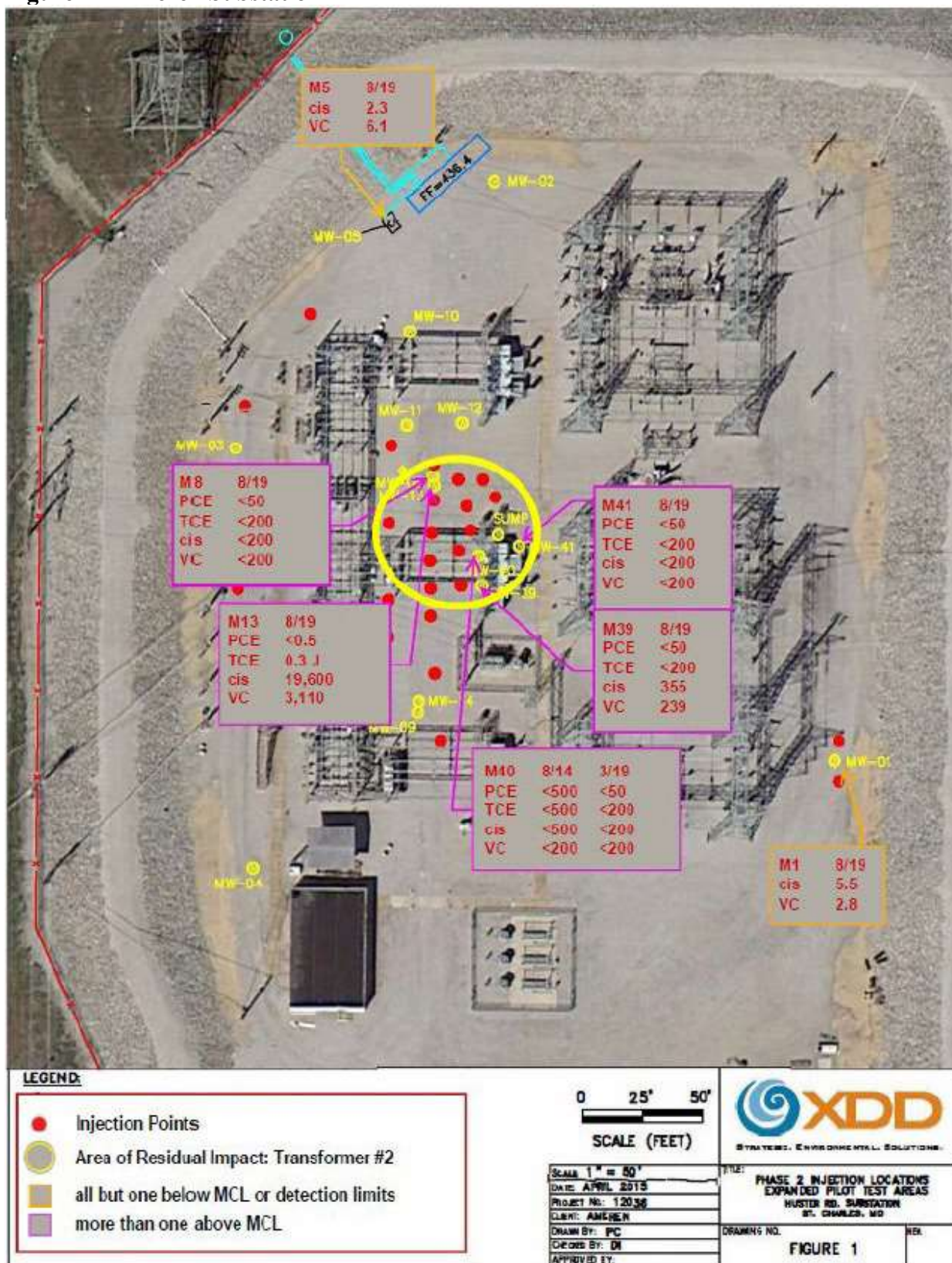


Figure 3 - Off-site – DCE Contour Plume Lines

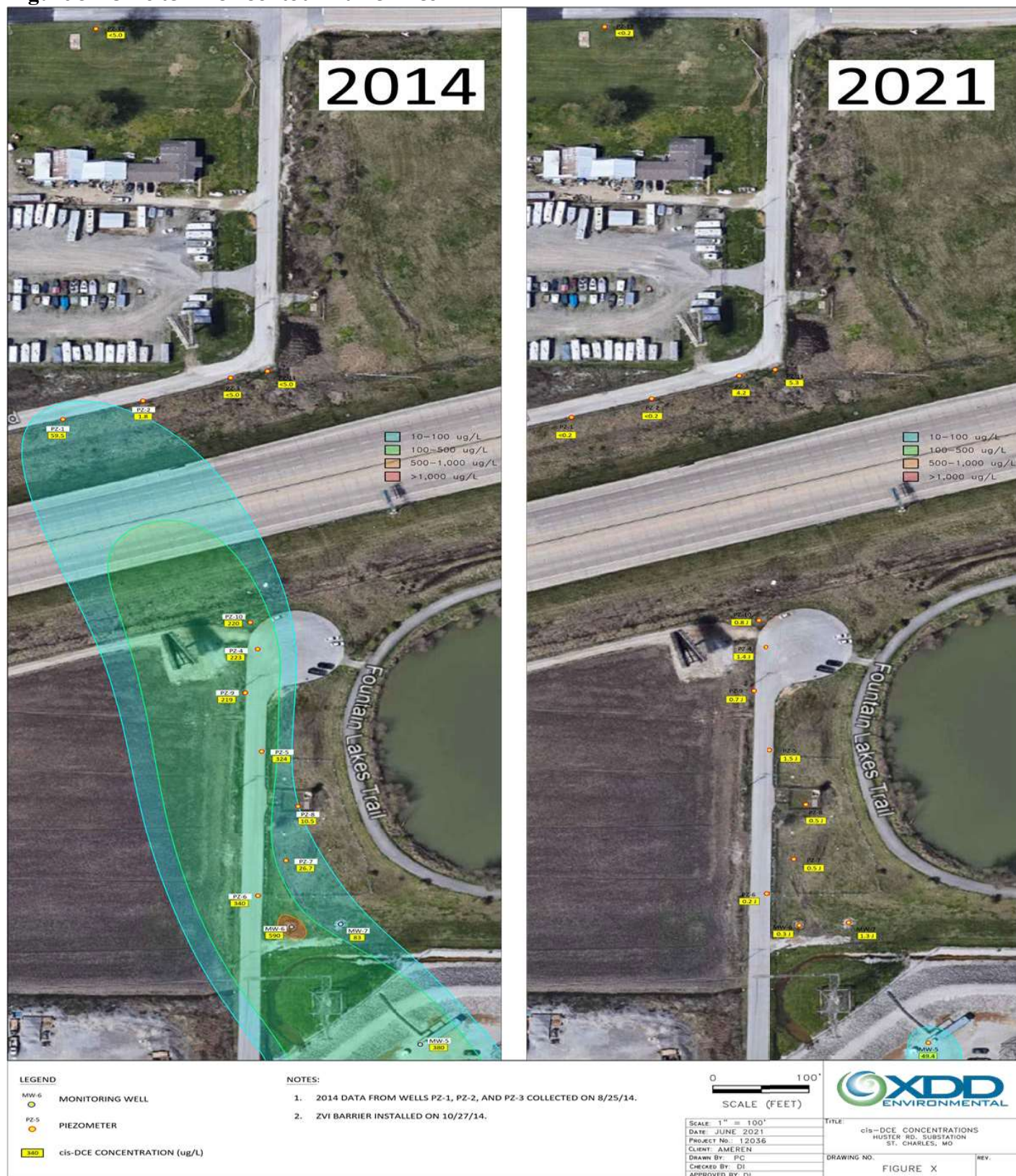


Figure 4 - Off-site – VC Contour Plume Lines

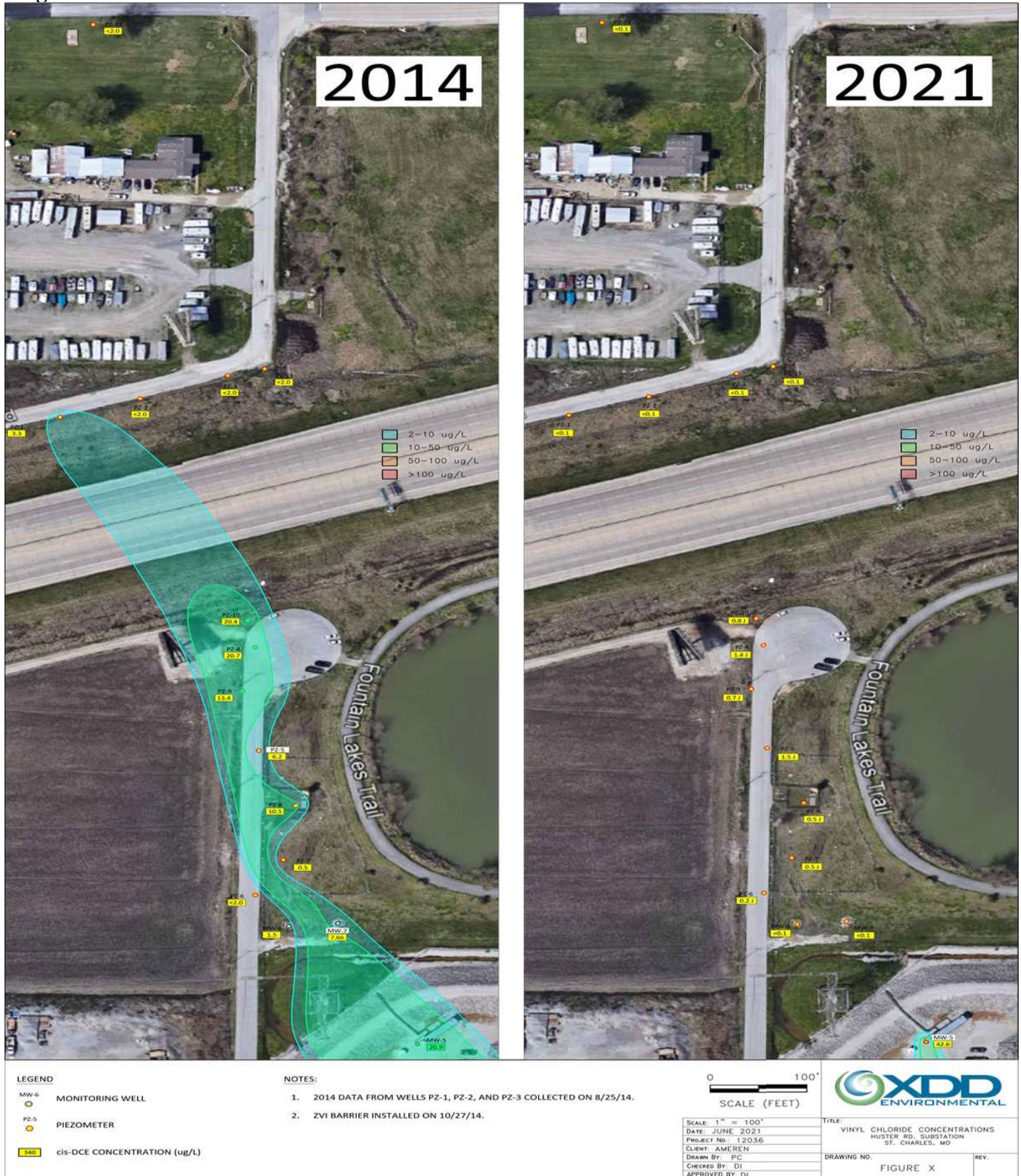


Figure 5 - On-site – DCE Contour Plume Lines

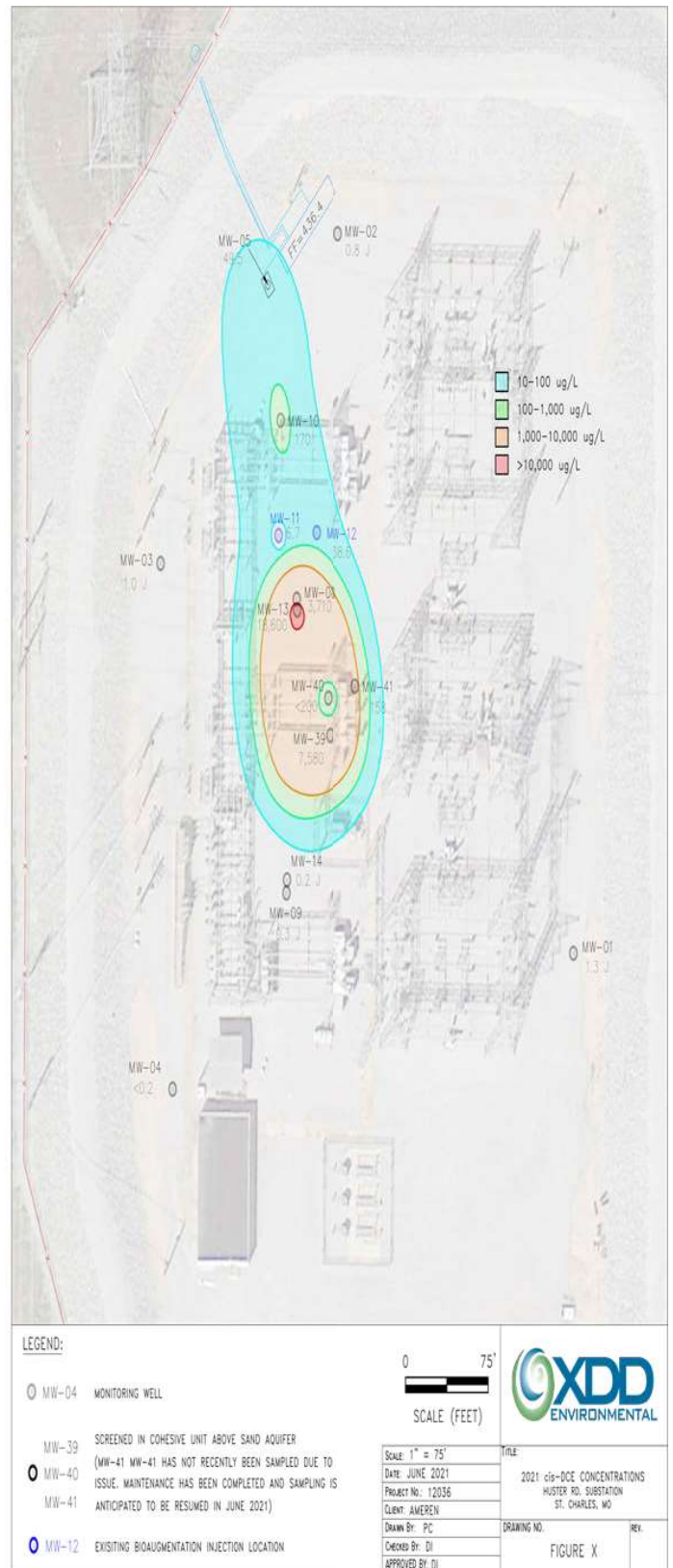
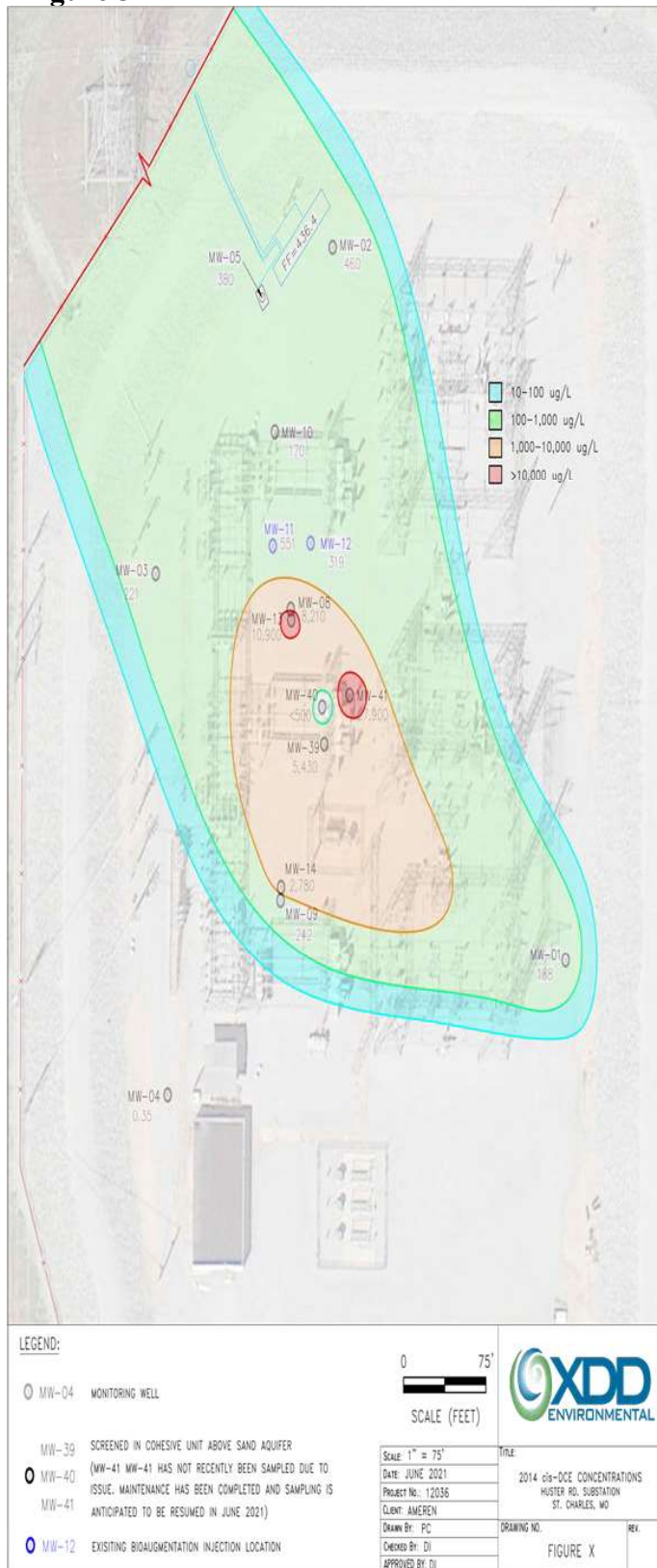
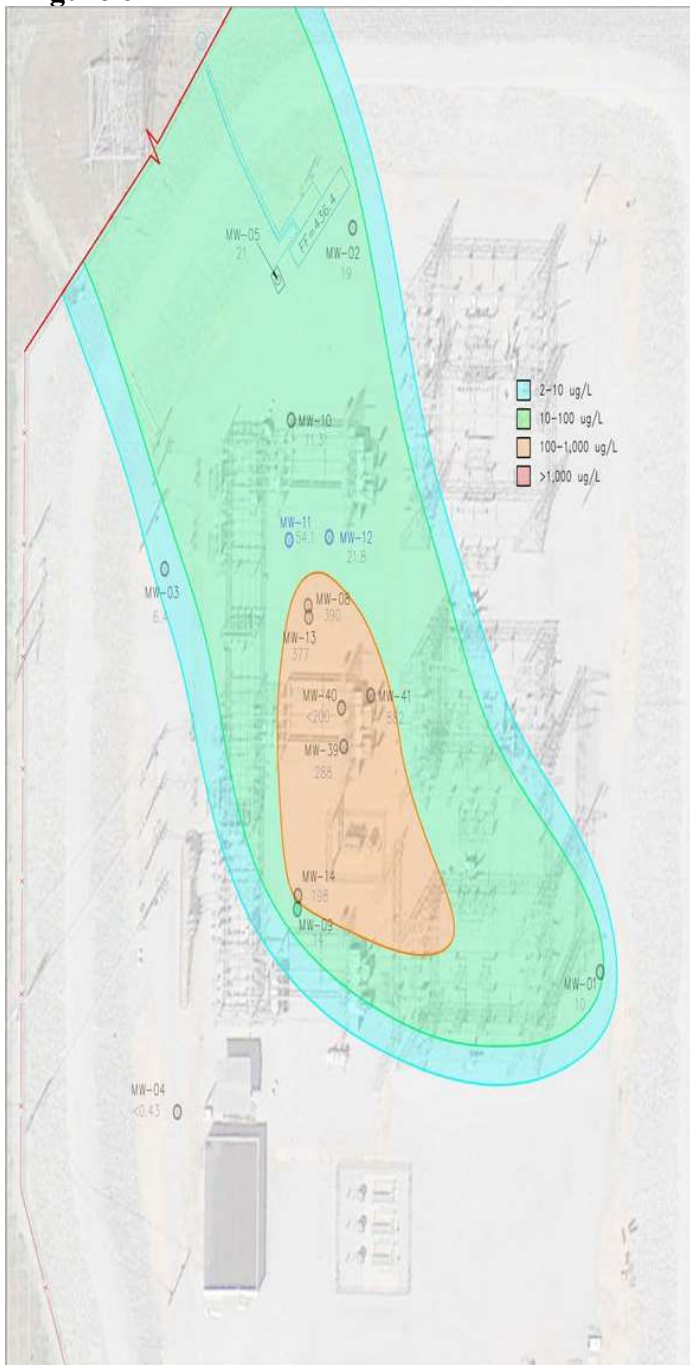


Figure 6 - On-site – VC Contour Plume Lines



LEGEND:

○ MW-04 MONITORING WELL

MW-39 SCREENED IN COHESIVE UNIT ABOVE SAND AQUIFER

○ MW-40 (MW-41 MW-41 HAS NOT RECENTLY BEEN SAMPLED DUE TO ISSUE. MAINTENANCE HAS BEEN COMPLETED AND SAMPLING IS ANTICIPATED TO BE RESUMED IN JUNE 2021)

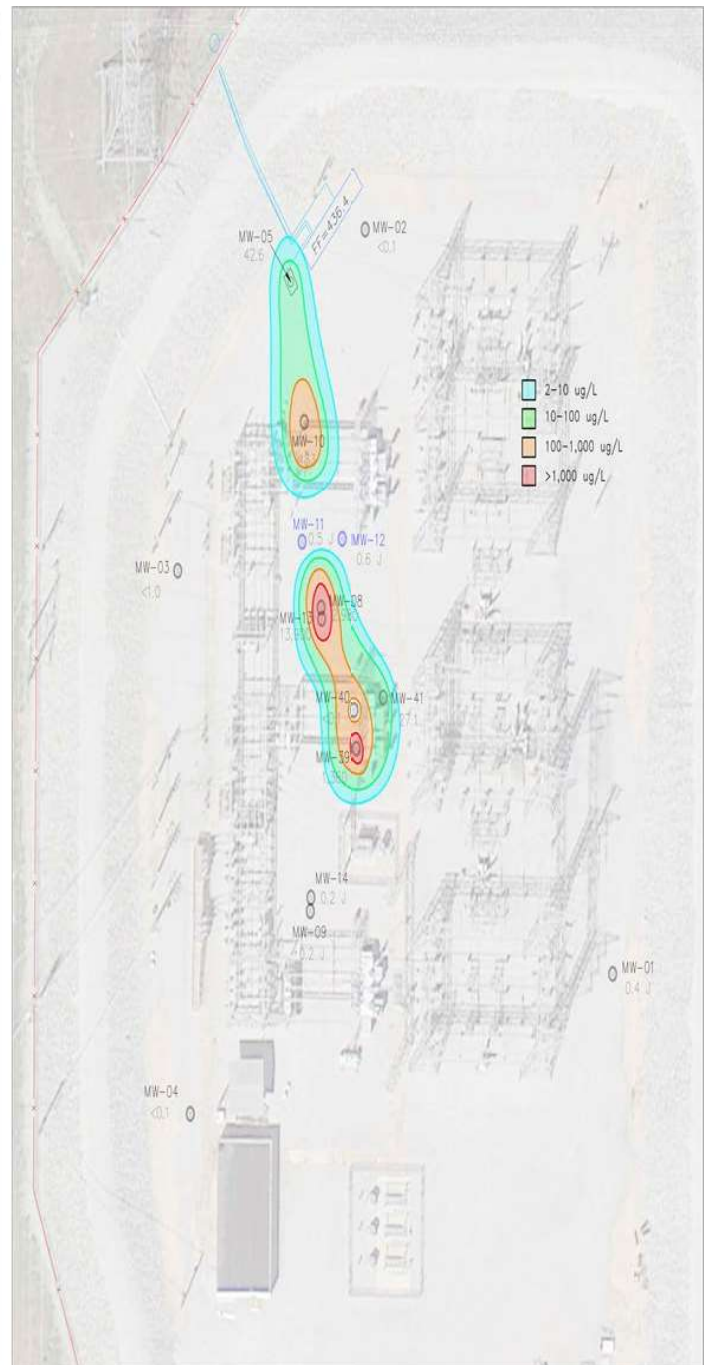
MW-41

○ MW-12 EXISTING BIOAUGMENTATION INJECTION LOCATION

0 75'
SCALE (FEET)



SCALE: 1" = 75'	TITLE:
DATE: JUNE 2021	2014 VINYL CHLORIDE CONCENTRATIONS
PROJECT NO.: 12036	HUSTER RD. SUBSTATION
CLIENT: AMEREN	ST. CHARLES, MO
DRAWN BY: PC	DRAWING NO.
CHECKED BY: DI	REV.
APPROVED BY: DI	FIGURE X



LEGEND:

○ MW-04 MONITORING WELL

MW-39 SCREENED IN COHESIVE UNIT ABOVE SAND AQUIFER

○ MW-40 (MW-41 MW-41 HAS NOT RECENTLY BEEN SAMPLED DUE TO ISSUE. MAINTENANCE HAS BEEN COMPLETED AND SAMPLING IS ANTICIPATED TO BE RESUMED IN JUNE 2021)

MW-41

○ MW-12 EXISTING BIOAUGMENTATION INJECTION LOCATION

0 75'
SCALE (FEET)



SCALE: 1" = 75'	TITLE:
DATE: JUNE 2021	2021 VINYL CHLORIDE CONCENTRATIONS
PROJECT NO.: 12036	HUSTER RD. SUBSTATION
CLIENT: AMEREN	ST. CHARLES, MO
DRAWN BY: PC	DRAWING NO.
CHECKED BY: DI	REV.
APPROVED BY: DI	FIGURE X

APPENDIX C
RESPONSIVENESS SUMMARY

**Findett OU4 Huster Road Substation Proposed Plan
Responsiveness Summary
February 9, 2021**

Commenter 1 (email received 2/23/21)

John M. Phillips
Utilities Superintendent
City of St. Charles - Public Works Dept.

Dear Mr. Sperry:

Below are comments on the Proposed Plan for clean-up and monitoring of the above referenced site.

1. Add monitoring wells between the sites and City Wells No. 8 and No. 10. The original investigation mentions that there were not enough monitoring wells to the east to characterize flow in that direction.
2. Contaminates north of the substation continue to persist and put City Wells No. 6, No. 7 and No. 9 at risk. Enhancement of the extraction rate or a new extraction well further north are needed to protect the City wells.
3. Continue remediation efforts and monitor the hardware to ensure proper operation. In-situ treatment should not be ruled out given the persistence of contamination north of the substation.
4. Contamination is anything foreign to the groundwater resource, not just MCL exceedances. Remediation needs to continue until contamination approaches the detection limits, not just to MCL levels. The responsible parties should be held accountable for any level of contamination in the water supply serving the citizens of Saint Charles.
5. Responsible parties should provide an additional City Wells. The City of St. Charles Board of Public Works decided to keep City Well No. 4 and No. 5 off-line due to the presence of contamination previously within but currently adjacent to the wells. Only real time monitoring or constant testing could prevent the contamination from entering the drinking water distribution system and the consuming customers. Quarterly or monthly testing could only notify the utility that they have in fact pumped contaminated water and distributed it without knowledge. We cannot in good conscience undertake this risk regardless of the EPA's assertions that being below MCL currently means there is no risk.
6. We recommend that the site be added to the NPL.
7. The EPA's FINDING OF FACT regarding the Hayford Bridge Road Site in the Administrative Settlement Agreement And Order On Consent For Emergency Response Action (USEPA REGION VII CERCLA -07-2012-0025) stated as a fact that the City of St. Charles Public Drinking Water Wells are endangered and steps needed to protect the PWS were outlined in the Action Memorandum dated June 25, 2012; which states:

"The purpose of this Action Memorandum is to request and document approval of the proposed time-critical removal action for the Findett Corp. site, also known as the Hayford Bridge Road Groundwater site (the Site), located in the city of St Charles (City), St. Charles County, Missouri. The general objective of the action is to prevent the contamination of the City's drinking water supply with volatile organic compounds (VOCs) from the Site. This will be achieved by expansion of the existing Elm Point Wellfield (EPW) to replace existing contaminated and threatened public water supply (PWS) wells, installation and operation of a Temporary Containment Well (TCW), preparation of a drinking

water treatment plant contingency Air Stripper Design (ASD) and additional groundwater and soil investigative work. The U.S. Environmental Protection Agency (EPA) anticipates that the potentially responsible parties (PRPs) will conduct the removal action.”

The first remedial action listed (underlined for emphasis) was the “expansion of the existing Elm Point Wellfield (EPW) to replace existing contaminated and threatened public water supply (PWS) wells”. Now the EPA has gone back on its previously stated fact that the PWS is threatened and the appropriate action needed to mitigate this risk is the expansion of the Elm Point Wellfield away from the contamination plume. The EPA further expressed this concern by stating that “Site conditions meet the criteria for response action under 40 CFR 300.415(b)(2) of the National Contingency Plan (NCP) under the following criteria: Actual or potential contamination of drinking water supplies or sensitive ecosystems [40CFR 300.415(b)(2)(ii)]”

Furthermore, the Section “IV. Endangerment Determination” states that, “Actual or threatened releases of hazardous substances from this Site may present an imminent and substantial endangerment to public health, or welfare, or the environment based on the presence of VOCs in the aquifer of the municipal drinking water wellfield at levels exceeding remedial action levels/state standards and on the consistent occurrence of VOCs in municipal PWS drinking water wells above detection limits.

The City of St Charles Public Water System should be made whole by expanding the Elm Point Wellfield to replace the vertical drinking water wells which have been impacted and/or threatened by the encroaching contamination as a way to mitigate the risk to the public drinking water system and protect the public health. The party which released the contamination into the environment should be responsible for any and all costs associated with the expansion of the wellfield to remove it from the threat of the contamination plume which they created. This was EPA’s previous stance as stated in the previously mentioned Action Memorandum as follows:

“The EPW will be expanded to the north and new wells will be installed to replace W5, W6 and W8. The new wells may be either two or three new vertical wells or a new radial/collector well connected to the City's raw water collection system for delivery to the Elm Point Water Treatment Plant. The revised and updated groundwater modeling will be calibrated based on the best technical information concerning aquifer characteristics, pumping effects, etc. The design and construction schedule for the new PWS wells will provide for the new wells to be in service as soon as practical. The wellfield expansion will be funded by the PRPs and will be conducted either as a "turnkey" PRP project or will be implemented through the City's acquisition, construction and operation processes.”

Sincerely,

John M. Phillips
Utilities Superintendent
City of St. Charles - Public Works Dept.
2871 Elm Point Industrial Dr.
St. Charles, MO 63301

EPA Response

Mr. Phillips,

The EPA appreciates you providing comments on the Findett OU4 Proposed Plan on behalf of the City of St. Charles – Public Works Department. The EPA met with representatives of the City in 2014 to discuss whether Ameren should install additional municipal wells. We have also discussed this subject multiple times since then with City representatives by phone during our quarterly calls. The EPA does not agree that current data indicates Ameren should install additional wells. Current data shows that the groundwater plume is fully contained within the Substation and that degradation of the contaminant plume is occurring. We appreciate the City's stance on not wanting any detections of chloro-ethenes (PCE, TCE, *cis*-1,2-DCE, and VC) in its public drinking water, but the Safe Drinking Water Act Maximum Contaminant Levels (SWDA MCLs), which are applicable requirements for this Superfund Site, were promulgated to assure the public that contaminants below these levels are safe.

The EPA understands that the City has a legitimate interest in making sure that the proposed remedy will have no negative economic consequences for operation of the City's Public Water Supply System and pose no public health risks. To support the City in these efforts the EPA provides the City with quarterly updates on groundwater monitoring and remedial actions taken at the Site. It is EPA's intention to be fully protective of public health while implementing this remedy and has set a cleanup objective for the remedy to restore groundwater to its beneficial use as a source of drinking water. As of this time, all groundwater exceeding MCLs are fully contained within the Substation and groundwater north of the Substation has not had an exceedance of any MCL since 2016; see well results below for *cis*-1,2-DCE (primary contaminant):

Well Number	Below MCL	Below 5 ug/L	Non-Detect
1	Since 9/14		
2	Since 11/15		Since 8/19
3	Since 11/14		Since 5/15
4	Since 8/15	Since 12/19	
5	Since 8/16	Since 12/18	
6	Since 5/14		Since 3/18
7	Since 10/14		Since 7/16
8	Since 5/15		Since 12/17
9	Since 4/16	Since 12/17	Since 8/19
10	Since 11/15	Since 7/16	Since 12/19
11		Since 12/14	
12			Since 12/14

The comment to add additional monitoring wells was discussed on the January and April 2021 quarterly calls between Ameren, the EPA, state, and City. It was agreed on the last call that Ameren would update its Conceptual Site Model (CSM). Ameren stated that they would provide the group with a Draft CSM by the July 2021 quarterly call. Further consideration of the need for additional wells will be dependent upon the results from the updated CSM.

The City also requested that the Site be added to the National Priorities List (NPL). The EPA will continue to discuss the listing of the Site, but no decisions regarding this matter has been made at this time.

The EPA did not make any changes were made to the Selected Remedy as a result of the comments in Mr. Phillips' letter.

Commenter 2 (email received 2/25/21)

Cory Rackley
Sewer Maintenance Supervisor
City of Saint Charles
Department of Public Works

Dear Mr. Sperry:

Below are comments on the Proposed Plan for clean-up and monitoring of the above referenced site.

1. Add monitoring wells between the contamination sites and City Wells No. 8 and No. 10. The original investigation mentions that there were not enough monitoring wells to the east to characterize flow in that direction.
2. Contaminates north of the substation continue to persist and put City Wells No. 6, No. 7 and No. 9 at risk. Enhancement of the extraction rate or a new extraction well further north are needed to protect the City Wells.
3. Continue remediation efforts and monitor the hardware to ensure proper operation. In-situ treatment should not be ruled out given the persistence of contamination north of the substation, including underneath 370.
4. Contamination is anything foreign to the groundwater resource, not just MCL exceedances. Remediation needs to continue until contamination approaches the detection limits, not just to MCL levels. The responsible parties should be held accountable for any level of contamination in the water supply serving the citizens of Saint Charles.
5. Proposed plan should require responsible parties to provide additional City Wells to replace the currently threatened and damaged Wells. The City Wells No. 4 and No. 5 are off -line due to the presence of contamination previously detected and due to the extremely close proximity to the contamination source. Only real time monitoring or constant testing could prevent the contamination from entering the drinking water distribution system and the consuming customers. Quarterly or monthly testing could only notify the utility that they have in fact pumped contaminated water and distributed it without knowledge.
6. We recommend that the site be added to the EPA National Priorities List.

Cory Rackley
Sewer Maintenance Supervisor
City of Saint Charles
Department of Public Works
2871 Elm Point Industrial Dr.
St. Charles, Mo 63301

EPA Response

The EPA appreciates you providing comments on the Findett OU4 Proposed Plan on behalf of the City of St. Charles – Public Works Department. The comments in your letter are a subset of the comments submitted by Mr. Phillips. Please refer to EPA's response to Mr. Phillips' comments.

The EPA did not make any changes were made to the Selected Remedy as a result of the comments in Mr. Rackley's letter.

APPENDIX D

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
CONCURRENCE LETTER TO PROPOSED PLAN**



January 12, 2021

Mary Peterson, Director
Superfund & Emergency Management Division
U.S. EPA, Region VII
1120 Renner Blvd.
Lenexa, KS 66219

Dear Mary Peterson:

The Missouri Department of Natural Resources' Division of Environmental Quality has reviewed the Proposed Plan, Findett/Hayford Bridge Road site, Ameren Missouri Huster Road Substation Operable Unit 4 (OU4), St. Charles, MO 63303, dated December 2020, as prepared by the U.S. Environmental Protection Agency (EPA), Region VII. The Department concurs with the EPA's Preferred Alternative (Alternative 3) - Enhanced In-Situ Bioaugmentation Attenuation, Groundwater Extraction and Treatment System (in standby mode), and institutional controls. The Department understands that Ameren Missouri, the potentially responsible party, is expected to continue funding and implementing response actions at OU4.

Thank you for the opportunity to participate in the review process to choose a remedy for OU4 of the Findett/Hayford Bridge Road site. If additional or unanticipated issues come to light during the public comment period and completion of the Record of Decision (ROD), the Department reserves the right to provide additional input that may affect the outcome of the ROD.

If you have any questions or comments, please contact me at 573-751-0763, or you may contact the Superfund Section Chief, Valerie Wilder, at P.O. Box 176, Jefferson City, MO 65102-0176, by phone at 573-751-7880, or by email to Valerie.Wilder@dnr.mo.gov.
Sincerely,

DIVISION OF ENVIRONMENTAL QUALITY

Edward B. Galbraith
Director